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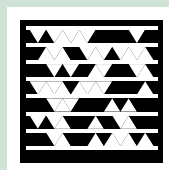
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Prepared by the AOS Education Committee/Photographs by Greg Allikas

The Basics of Choosing a Fertilizer and Application



IF THEIR OTHER REQUIREMENTS are met, orchids will grow and flower for fairly long periods without fertilizer. Witness the people in tropical areas such as South Florida who grow them mounted on trees and let nature do the rest. Indeed, that is how epiphytic orchids grow in nature. But hobbyists generally try to give their orchids more than the bare minimum so that the plants flower at or above their potential.

There are many different points of view on how to fertilize orchids and what fertilizer to use. Everyone has a favorite fertilizer or supplement. There are so many variables that how and when you fertilize depends on what kinds of orchids you grow and how and where you grow them. This article will offer a brief explanation and general guidelines on fertilizing orchids. For more specific application, join your local orchid society and ask someone there who grows the same kind of orchids as you. It is unlikely that you will kill any orchids with orchid fertilizer so following the recommendations here will provide your plants needed nutrition.

If you are a gardener you are probably familiar with the N-P-K listings on fertilizer bags. Orchid fertilizers have them too. Let's go over these three elements and see how they affect plant growth. Nitrogen (N) helps make plants green, and helps them grow faster. It is the element responsible for vegetative growth (the leafy parts). Phosphorus

(P) is good for root growth, disease resistance, seed and fruit growth, and especially for blooming and flowering. Potassium (K) helps with increasing root growth, drought resistance and disease resistance.

OPTIONS There are three main types of fertilizers used for orchids: balanced, high nitrogen and bloom booster.

◆ Balanced fertilizers have been traditionally recommended for use with orchids potted in inorganic potting media such as lava rock and Aliflor, and tree fern (which has fallen out of favor due to conservation concerns). Plants mounted on cork bark or other substrates also benefit from using a balanced fertilizer. An example of a balanced fertilizer would be represented by the numbers 20-20-20.

◆ High-nitrogen fertilizers have long been recommended for use with orchids potted in fir bark or fir bark mixes. The reason for extra nitrogen is that the bacteria that cause the bark to decay use up much of the available nitrogen, thus depleting the orchid. This practice has recently come into question. Nonetheless, using a high-nitrogen fertilizer, especially in spring at the beginning of the growing season, can promote strong vegetative growth under ideal conditions. An example of high-nitrogen fertilizer would be 30-10-10.

◆ Bloom or blossom-booster formulas are high in phosphorus. Typically, high-



- [1] Good cultural practices that include regular fertilizing will produce well-flowered orchids, such as this *Ascocentrum ampullaceum*. Grower: Greg Allikas and Kathy Figiel.
- [2] Vandaceous orchids that were under fertilized (left) and received adequate fertilizer (right).
- [3] Most experienced growers use fertilizer at ½ the label-recommended strength.

phosphorus fertilizers are applied every other week for four to six applications the season before expected bloom. For winter-spring blooming orchids, bloom booster is usually applied in the autumn. Vandaceous hybrids and other orchids that bloom throughout the year can be given bloom booster every third or fourth fertilizing. An example of a bloom booster would be 10-30-20. Fertilizers used on orchids should contain little or no urea. This is because soil organisms must first convert the nitrogen in urea to a form useable by plants, and since orchids do not grow in soil, this conversion does not occur efficiently.

APPLICATION How fertilizer is applied varies as much as orchids themselves. Typically, plants are fertilized once a week during spring and summer and every two weeks in the autumn and winter. Regardless of the fertilizer that you choose, most experienced growers use ½ the label-recommended strength. Remember, in nature epiphytic orchids' roots are exposed and the only nutrients they receive are from bird and animal droppings, decaying insects and detritus. The old saying about fertilizing orchids is: Feed them weekly weakly. Fertilizer is best applied in the morning on sunny days. For mounted orchids, or orchids with exposed roots, such as vandas in empty baskets, many growers routinely first water the plants and then follow with fertilizer a half hour later. The watering before fertilizing prepares the spongy velamen of the orchid roots to better utilize the fertilizer. Orchids in pots are usually not watered first but some growers have their own techniques.

There are requirements specific to certain orchids. For instance, do not fertilize *nobile*-type dendrobiums after early autumn. This rule actually applies to all orchids that have decided rest periods and all deciduous orchids. Fertilizing them while in their rest period keeps them in continual growth instead of resting before producing flowers. In other words, you may get a lot of growth and no flowers.

There are also many secret recipes growers use that supposedly produce stronger plants or more flowers. Certainly vitamins and micronutrients are as essential as the building blocks of plant growth mentioned above. Elements such as magnesium, boron, calcium, carbon and others are required for strong plant growth. All in all, although there are certain practices that are documented as being helpful, it has not been proven that supplements actually contribute to improved growth in orchids — but it probably doesn't hurt to use them.

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April: The Month of Niceness

By Thomas Miranda

Thoughtful Gestures in the Orchid Community Promote Positive Attitudes

SPRING IS A MOST UPLIFTING TIME of year, with its cool, fresh weather, its astonishing rainbow palette of floral exuberance and accompanying fragrant essences in the air. Whatever hardships life may lay at our doorstep, daffodils, cherry blossoms and spring cattleyas are, at least, a temporary respite from adversity. Spring is nice. I had a teacher years ago who chided me for using that word too often and opined that “nice” was actually an insult, that it was an adjective used to describe something bland. Something “nice” couldn’t be branded with any superlatives. It merely described an object or experience that was pleasant, but evoked no passion. As I’ve matured I’ve come to think differently about “niceness” and its importance and relevance. For example, I’ve discovered that in my desire to always be right or correct, I’ve also become confrontational, calling people out when they say something inaccurate or that I do not agree with. However justified I may be in correcting someone, in the end this appears as negativity and drives away potential friendships and relationships. Being nice is something I have to work on every day, but this work has also yielded fantastic, if immeasurable, results.



Thomas Miranda

At the risk of sounding like an elementary school teacher, I believe that, no matter what, it is always important to be nice, to listen to and respect others’ points of view and to be kind

to everyone, even those we completely disagree with. This kind of sensitivity is especially important in today’s orchid world and particularly in the orchid judging community. It is frequently lamented that participation in judging has been waning over the years and that, in particular, young people are underrepresented or even absent from our meetings and events. While this is often blamed on the seductive pull of the Internet, that is really a lame explanation, as in the orchid world, there is no image or website that can substitute for the real thing. It is up to us to create a nurturing environment for everyone who wants to take part in the joy of orchid growing, no matter how old and crotchety, how young and callow or how odd and quirky. It is this diversity that makes us stronger, and diversity is



SANTA BARBARA ORCHID ESTATE

[1] Little girls may be made of sugar and spice, but a *Brassavola*, a *Laelia* and a *Cattleya* were combined to create *Brassolaeliocattleya* Everything Nice ‘Exquisite’, AM/AOS (*Rlc. Memoria Helen Brown* × *B. perrinii*), now known under the genus name *Rhynchobrassoleya*. Grower: Santa Barbara Orchid Estate.

what I love most about orchids. We are all good at nurturing and coddling our plants, but seemingly less successful in growing our own ranks. I think that in this regard, niceness can go a long way.

MILDNESS Even though spring rains and storms are still likely in April, we can all agree that the weather has improved greatly since the bleak midwinter. Orchids reflect the changes too and are stimulated by the lengthening days and increased light levels to begin their new growths. Even plants such as cymbidiums, lycastes and phalaenopsis that have just finished blooming are already producing new roots, leaves and growths that are the beginnings of this year’s pseudobulbs. There is a lot of imminent work to be done now. You must take advantage of all this growing activity as this is the time when plants establish themselves most easily.

PREPAREDNESS Before repotting season gets seriously underway, be sure you have all the supplies you’ll need to do a good job. Hit the garden centers or crack open the supply catalog and get a generous supply of clean new pots and baskets in as-

sorted styles and sizes, fresh orchid mixes, rhizome clips, blank labels for any divisions you might make and fresh, unspoiled fertilizers. If you’re anything like me, having everything needed at your fingertips makes for a fun and efficient session of repotting. If I have to keep going back to the store or discover I do not have everything I need, I risk doing a poor or incomplete job or recycling supplies that may be suspect. In the end, the plants will suffer and so will your growing. Your orchids’ needs are not that complicated. Just like when you are cooking, it is always true that the best results come directly from your best efforts and quality ingredients.

MINDFULNESS Go through every plant in your collection and assess its needs and progress. This will help you set priorities in terms of which plants need to be repotted first. While most everything benefits from a spring repotting, some plants, particularly cattleyas and species from seasonally dry forests such as encyclias, catasetums and brassavolas, are rapidly coming out of dormancy now and you should try to repot them before the new roots are 2 inches (5 cm) long. Otherwise, the new roots may be damaged and crushed while repotting. Allowing roots to develop and grow naturally into their new fresh medium is what we all strive for at this time of year.

GRACIOUSNESS Invite your curious friends, neighbors and even that surly teenager across the street to help you during potting season. If they are not interested they will likely politely turn down your entreaties, but you just might be surprised how interested they might be. Reward anyone who helps you with a nice division or a new blooming phalaenopsis from the supermarket. Your invitation to them into this unfamiliar but totally fascinating world might create a new orchid enthusiast. And besides, it’s a nice thing to do.

Thomas Miranda is the orchid collection specialist at the Smithsonian Institution and an AOS accredited judge. He was instrumental in the US Botanic Garden-Smithsonian Institution display entitled “Orchids of Latin America,” on view through April 21 at the National Museum of Natural History, Exhibit Gallery, 1st Floor, West Wing (www.gardens.si.edu/what). 3000 Cedar Lane, Fairfax, Virginia 22031 (email MirandaT@si.edu).

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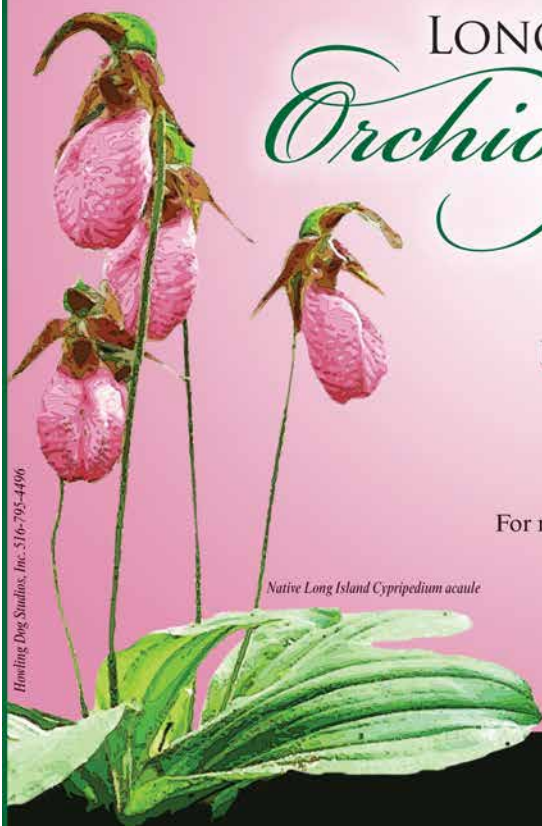
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Cyrtorchilum By Thomas Mirenda

Pretty Darn Cool

ON MY FIRST TRIP TO ECUADOR, well over a decade ago for an Andean Orchid Conference, field trips were offered to attendees to see orchids in the wild. Naturally, I was eager to go on these jaunts as this is the sort of thing I live for. While most of the sites we visited were within a few hours' drive of the capital Quito, a big, bustling city, there was a remarkable variety of wild orchids to be seen at virtually every stop. Many insights came to me while seeing plants I knew well from cultivation thriving in their natural habitats.



Thomas Mirenda

Since that trip I've made it a point to see wild orchids in situ somewhere in the world virtually every year. While way up in the mountains, in telipogon country, it was quite cold and I was surprised to find a long twining "vine" with huge glowing yellow flowers, growing and blooming in the low scrappy understory. On closer inspection, the plant was a terrestrial yet its blooms were at or above eye level, with an inflorescence more than 6 feet (1.8 m) long. I realized that the plant was an old friend I had grown and flowered (though not nearly so well) at Greentree Estate in Manhasset, New York several years before: *Cyrtorchilum macranthum*. It was immediately clear to me why I hadn't done well with this beauty. I had been growing it too warm and not watering it nearly enough. This spectacle of a plant required sweater weather — temperatures in the 50s and 60s F (10–15 and 16–21 C) during the day and, I suspect, well into the 40s F (4–9 C) at night.

Indeed, cyrtorchilums are rare in cultivation, mostly because we tend not to keep our growing areas this cold, and because their prodigious, unruly and rambling inflorescences are difficult to deal with in a smaller greenhouse. But they are totally worth any extra effort you might need to incur for their lavish display of extraordinary flowers. Like their impressive inflorescences, these high-mountain, Andean plants in the *Oncidium* alliance have had a long and twisted taxonomic history. Like many genera in the *Oncidiinae*, the flowers are deceptive mimics of other flowers, usually oil-reward flowers such as malpighias that grow alongside them in the wild. Therefore, floral traits are convergent

and misleading, and not really indicative of their distinction from the genus *Oncidium*. Many of the species in this group have been confused and reclassified as other genera, especially *Oncidium* and *Odontoglossum*, over the last 180 years. *Cyrtorchilums* do seem to be distinct from even the recent broad concept of *Oncidium* currently agreed on by



ERIC HUNT



MIKE PEARSON

- [1] Probably the best known of this genus, *Cyrtorchilum macranthum* 'Pacifica' holds beautiful flowers on its twining inflorescences that climb through the underbrush in its cloud forest habitat. Occurring in the highlands of Peru, Ecuador and Colombia, plants have been found at elevations as high as 9,850 feet (3,000 m). Grower: Golden Gate Orchids.
- [2] Many interesting clones of *Cyr. macranthum* exist, including 'Solar Place', HCC/AOS, with a much more manageable, shorter inflorescence. It has been known in the trade as "var. nanum," an informal name. Grower: Tom Etheridge and Luanne Rolly.

most orchid taxonomists. While DNA supports this distinction, the average orchidist can identify them by vegetative characteristics rather than floristic ones. *Cyrtorchilums* tend to have well-spaced pseudobulbs along elongate rhizomes and long, twining panicle-like, many-flowered inflorescences emerging from basal distichous sheaths.

Some of the most beautiful and unusually colored flowers of the *Oncidium* alliance are members of this fantastic genus. *Cyrtorchilum macranthum* has been well known in collections for more than 100 years and there are many awarded clones in cultivation. But most other species, while equally beautiful and fascinating, are much rarer in collections. On the same trip to Ecuador, I recall being awestruck when entering the nursery at Ecuagenera, Cuenca, to find a bench full of *Cyrtorchilum edwardii* in bloom. Although the flowers are rather small according to the standards for cyrtorchilums, it was the huge, 4-foot (1.2-m) spikes bearing a multitude of violet-purple flowers with contrasting yellow crests that blew my mind. While this color may exist in cattleyas, I had never seen anything like it in the Oncidiinae. This astonishing display, combined with its fragrance reminiscent of roses, sealed my fate as a devotee of cyrtorchilums. Unfortunately I had no luck growing this species in Washington, DC. Without its cool nighttime temperatures, plants of this species decline rapidly. While less compelling, but still totally wonderful, the intermediate-growing *Cyrtorchilum serratum* proved to be much more amenable to cultivation in the Mid-Atlantic. Many of the species do seem to need to be grown quite cold, but daytime warmth is well tolerated as long as cool night time temperatures can be offered to them most of the year.

Some of the plants that growers have been successful with include Colombian species, such as *Cyrtorchilum annulare* and the more widespread *Cyrtorchilum pardinum*. But it is worth experimenting with other showier species, such as *Cyrtorchilum leopoldianum* (including plants under the name *Cyrtorchilum villenaorum*, now a synonym) and *Cyrtorchilum orgyale*, for their larger flowers and unusual colors. With the trend toward more compact, warmer-growing plants, cyrtorchilums have not been used much in the recent wave of *Oncidium* intergeneric breeding, but I believe they have tremendous potential for creating some spectacular hybrids.

As for the unruly, twining inflorescences, I was taught years ago to train the spikes onto a large ring or trellis and find that, when controlled in this way, plants were more easily dealt with and transportable for exhibition. With their elongate rhizomes, cyrtorchilums can be challenging to contain in pots. Most hobbyists use baskets, as the plants need a fast-draining medium that also has good moisture retention. A medium-grade bark mix with some New Zealand sphagnum added works well. Perhaps the most successful growing I've seen was in Canada where the enthusiast



ERIC HUNT



NICOLAS GOMEZ



ERIC HUNT



6

- [3] One of the easier plants of this group to grow successfully in intermediate conditions, *Cyrtorchilum serratum* tolerates warmer weather better than most of the other species. Grower: OrchidMania.
- [4] Although *Cyrtorchilum annulare* is often confused with *Cyrtorchilum monachicum*, it is distinct. *Cyrtorchilum annulare* 'Nancy', AM/AOS, is an example of the rimmed cyrtorchilum that is found only in Colombia. Grower: Nancy Martinez.
- [5] In the author's view, *Cyrtorchilum edwardii* is the most spectacular of the cyrtorchilums and possibly the whole Oncidiinae. Its astonishing color seems to come through in its hybrids. *Cyrtorchilum edwardii* 'Crown Royal' is shown. Grower: Golden Gate Orchids.
- [6] *Cyrtorchilum leopoldianum* is a smaller, interesting species from the transitional area between mid-elevation savanna woods and cloud forest highlands of Peru and Colombia. It shows promise to be somewhat easier to grow than the cloud-forest types. The clone 'Stony Point', HCC/AOS, which was awarded under the name *Cyrtorchilum villenaorum*, is shown. Grower: Marni Turkel.

custom constructed a large rectangular basket that allowed the rhizome to ramble but still allowed space for the pseudobulbs to root into the mix.

Like any other worthwhile endeavor,

overcoming the challenges of cultivating cyrtorchilums will reap tremendous and truly beautiful rewards. I totally encourage anyone who has cool growing conditions to give them a try.

Top of the Line

THE YEAR 2011 PROVIDED A WEALTH OF AWARDS FOR THE JUDGING Committee to choose from when selecting the plants to be recommended to the Board of Trustees for the AOS Special Awards. As I reviewed these 16 plants, I came to some interesting (or perhaps self-evident) conclusions:

- ◆ Culture counts.
 - Seven of these plants received certificates of commendation for plant culture, five of them scoring 90 points or greater and earning the growers a Certificate of Cultural Excellence (CCE); in addition, four of the previously mentioned plants also received flower-quality awards.
 - Two of the awards — both First Class Certificates (FCCs) — were upgrades to cultivars with previous flower-quality awards, suggesting that even here cultural excellence is evident.
- ◆ There is a continued commitment on the part of hobbyists to beloved species and hybrids; it is not always the new and different that catches our eye or our imagination.
- ◆ With apologies to Shakespeare and Keats, that which we call an orchid by any other name is still a thing of beauty — changes in nomenclature may be underway but we as growers are actively engaged, enraptured, undeterred.

I want to extend thanks to all of the avocational and professional award photographers who generously serve the AOS — without your commitment to providing quality images our record would be a poorer place. Which leads me to a shout out to Irma Saldana-Selles, Arthur Pinkers and Jea Shang Photography: each of them provided two or more spectacular photographs for us to enjoy.

Robert “Bob” Winkley has been a member of the AOS for more than 25 years and is an accredited judge and chair of the Northeast Judging Center. A classical pianist by training, he is registrar for the college portion of New England Conservatory in Boston, Massachusetts. 80 Florida Street, Unit 9, Dorchester, Massachusetts 02124 (email rwinkley@aol.com).

[1] CARLYLE A. LUER AWARD

The genus *Limax* in the animal kingdom is anathema to all orchid growers; within it may be found the European garden slug and its kin, capable of making short work of an orchid. For a miniature such as this year's Carlyle Luer Pleurothallid Award, *Masdevallia limax* 'Rojohn', AM-CCM/AOS, it must seem ironic for a plant to bear the name of an animal that can inflict terrific damage in the wink of an eye. Who knew taxonomists could have such a sense of humor? But the resemblance between the flower and its animal namesake is uncanny; when this plant was exhibited, its 39 large, uniformly shaped, vibrant orange flowers well displayed above the foliage and its caudae forming an equilateral triangle of bright orange-tipped “antennae” must surely have suggested a group of fat-bellied slugs taking flight. Exhibited by Claire Rojohn, DVM, Hales Corner, Wisconsin, at the Orchid Growers' Guild Orchid Quest in Madison, Wisconsin, and nicely photographed by Richard P. Narf.



The American Orchid Society's Special Judging Awards for 2011

BY ROBERT WINKLEY





2

[2] ROY T. FUKUMURA AWARD

The plant kingdom has a way of producing color combinations that rival the aesthetics of some of the most avant-garde fashionistas of New York City's Fifth Avenue. Among orchids, such audacious coloration can often be found in vandaceous hybrids: this is certainly the case for *Aeridovanda Somsri Sunlight 'Merienda Lane'*, AM/AOS (*Aer. lawrenciae* × *V. Rasri Gold*), exhibited by Ed and Donna Wise, Conyers, Georgia, at the Pacific South Center's monthly judging in San Diego, California, and photographed by Arnold Gum. Where else might one encounter a flower that is "light butter yellow, white basally, suffused pink apically" and with a trilobed lip that is white with a deep pink midlobe and callus and a light yellow spur? Yet somehow these colors work harmoniously; when coupled with the flower's wonderful, full form you have the makings of something remarkable.



3

[3] MASATOSHI MIYAMOTO AWARD

To paraphrase Gollum, a beloved character from J.R.R. Tolkien's *The Hobbit* and *Lord of the Rings*, "orchids can be tricky." Sometimes they do not reveal their full selves — their "true" selves — for years. Only with mindful nurturing can this happen. This is surely the case for this year's Miyamoto Award recipient, *Rhyncholaeliocattleya* (syn. *Brassocattleya*) *Memoria Rosa Vazquez 'Rafael'*, FCC/AOS (*C. Esbetts* × *Breaker's Reach*). First exhibited by Rafael Rodriguez of Gurabo, Puerto Rico, in 2002, it was awarded an 85-point AM/AOS, bearing two extremely large flowers on one strong inflorescence. Nearly nine years later, Rodriguez exhibited it again to the Florida-Caribbean Judging Center in Ponce, Puerto Rico, this time with "Four outstanding, full, flat, fragrant flowers and three buds well-presented on 4 strong, erect inflorescences." This flowering also proves another point: bigger is not always better. Although the natural spreads of the flower are slightly smaller than the prior award, the improved shape and excellent lip form (both beautifully captured in Irma Saldana-Selles' photograph), as well as higher flower count, convinced the judges that an award upgrade was merited.



4

[4] BENJAMIN KODAMA AWARD

This is the second time a plant of *Dendrobium cyanocentrum* has won the coveted Benjamin Kodama Award, which speaks volumes about this wonderful miniature hailing from section *Oxyglossum* of *Dendrobium*. The cultivar 'Cosmo', awarded at the Pacific Northwest Judging Center's monthly judging in Silverton, Oregon, garnered both an AM/AOS and a CCE/AOS; the compact plant bore 40 cream-colored flowers overlaid blue-violet and six buds on 23 inflorescences. The exhibitor, Terry Thompson, Portland, Oregon, is a hobbyist noted for cultivating only "cold-growing things" and "turning out phenomenal plants from a tiny backyard greenhouse," according to Tom Etheridge, Corvallis, Oregon. The photographer, Mike Pearson, handles the sometimes difficult blue tones in this flower with great finesse. Bravo to both!

[5] BUTTERWORTH PRIZE

The genus *Angraecum* has many species and hybrids known to grow into spectacular specimens. However, since its inception in 1965, the Butterworth Prize has never gone to one of these handsome plants. However, all that has changed with this year's recipient, *Angraecum Crestwood 'Tomorrow Star'*, FCC-CCE/AOS (*Veitchii* × *sesquipedale*). Clearly wowing the judges at the 2011 Taiwan International Orchid Show, Tainan, with its "Seventy-two exquisite, gleaming white flowers spaced well on 15 cascading, beautifully arranged, arched inflorescences borne on a superbly grown, clean, 82-cm-wide by 75-cm-tall specimen plant," it garnered not only two coveted AOS awards, but was also awarded a trophy sponsored by the AOS for Best Specimen in the Show.

Grown by Hsiang Yu Orchids, Taichung City, Taiwan, an extremely desirable aspect of this flowering — hinted at in the description but beautifully revealed by Jea Shang Photography's image — is that all of the flowers are resupinate (the lip being the lowest segment of the flower). *Angraecum Veitchii* (*eburneum* × *sesquipedale*), one of the parents of this cross, is notorious for producing flowers that are both resupinate (a trait of *Angcm. sesquipedale*), nonresupinate (a trait of *Angcm. eburneum*) and somewhere in between on the same inflorescence, which, in the colloquial language of one of my judging friends, can make a "higgledy-piggledy" mess of the flower arrangement. Well, there is nothing higgledy-piggledy here — just a fountain of brilliantly colored flowers that are nearly perfect in every way.





[6] HERBERT HAGER AWARD

The Herbert Hager Phalaenopsis Award honors a man and his "lifelong dedication to the advancement of orchids, especially phalaenopsis, through pioneering hybridizing and superior culture." This year's recipient, *Phalaenopsis* Jose Carreras 'Amber', HCC/AOS (Spirit House × Ambonosa), is from a cross originally registered by the exhibitor Berry Woodson, Fort Worth, Texas, in 2000. It takes a great deal of patience to bring a cross to fruition; Woodson began exhibiting plants from the cross in 2009. A group of 14 plants (including two plants previously awarded) was shown in 2011 at the monthly judging of the Dallas Judging Center; the group garnered an Award of Quality. David Gould's photograph of the clone 'Amber', HCC/AOS, reveals its stunning color combination (sepals and petals salmon heavily overlaid cardinal red) and glossy satin texture.



[7] ANN AND PHIL JESUP BOTANICAL TROPHY

Popular in cultivation for a long time (there are AOS awards to this species dating from 1938), *Dendrobium lindleyi*¹ rewards growers who meet its specific needs with a profusion of flowers. Having a wide natural range, it is an intermediate- to warm-growing plant that thrives in deciduous forests where it receives lots of warmth, water and bright, filtered sun while actively growing, followed by a cooler, dry period with bright light. As the recipient of the Ann and Phil Jesup Botanical Trophy, *Den. lindleyi* 'Michael Zeplin's Honey', CCE/AOS, honors both this species entry into the AOS Special Awards Hall of Fame and its progress toward cultural perfection. Michael Zeplin's (Victoria, Texas) unwavering commitment to the needs of this species is captured in Malcolm McCorquodale's photograph. At the time of its exhibition at the Houston Center monthly judging, the plant produced 4,375 flowers on 174 inflorescences, practically obscuring the near perfect 30-inch (76-cm) plant, no small feat because this species is successive blooming and the flowers short-lived.

¹Synonym *Dendrobium aggregatum*.

[8] FRED HILLERMAN AWARD

The genus *Aerangis* provides orchid growers with a number of attractive miniature-to-medium-sized species noted for the exceptional beauty of their flowers (often said to resemble birds in flight) and for their floriferousness; it is no wonder that Fred Hillerman, for whom this award is named, committed so much love and care to the advocacy of these plants. In 2011 these traits were brought to fruition in *Aerangis biloba* 'Missy's Angel', CCE/AOS, grown by Susan Davis. With 327 ivory flowers and 73 buds densely arranged on 38 inflorescences cascading from an immaculate, multigrowth plant, this submission by Davis, of Vallejo, California, surely gave those present at the California Sierra Nevada Judging Center that day a spectacular, perhaps once-in-a-lifetime experience that we can appreciate thanks to Ramon de los Santos' excellent image.



[9] BILL THOMS AWARD

Bulbophyllum graveolens has gone by several names since it first graced the judging table in 1965. At times considered a *Cirrhopetalum*, both generic designations have been combined with the specific epithets *graveolens* and *robustum*. Researching prior awards for such plants was difficult in the past unless you had judges present familiar with nomenclatural history. Now, as the databases running judging research tools like AQ *Plus* and OrchidsPlus become more robust, the synonymous epithets are retrieved along with the preferred name and the whole award record is available for consideration. This must certainly be the case with the clone 'Paraiso Tropical', AM/AOS, grown by Carlos Fighetti, Guaynabo, Puerto Rico. With 37 flowers on two inflorescences the per-inflorescence count was significantly higher than that of many other clones and, while the flower coloration is similar, the clarity and contrast are well described in the record and borne witness to by Irma Saldana-Selles' finely composed image taken at the Sociedad de Orquidistas del Este Show in Fajardo, Puerto Rico.





[10] ERNEST HETHERINGTON AWARD

This year's Ernest Hetherington Award goes to *Cymbidium* Greek Goddess 'Aphrodite', JC-AM/AOS (Helen Tangcay × Rincon Peak), a beautiful hybrid created by the late Loren Batchman (1940–2012) and exhibited by Casa de Las Orquideas, Solana Beach, California, the firm he and his wife, Nancy, founded in 1976, at the South Bay Orchid Society Show in Torrance, California. Commended for its distinctive and balanced petal and sepal coloration, and captured exquisitely by Arthur T. Pinkers in his photograph, this award is a fitting tribute to Loren as this classic cymbidium hybrid exemplifies his passion for creating highly colored and unusual cymbidiums.



[11] MERRITT W. HUNTINGTON AWARD

"The most outstanding plant awarded an FCC during the previous calendar year." This, in a nutshell, is the Merritt Huntington Award, established in recognition of this great man's commitment to the finest in orchids and his countless contributions to the AOS. How does one pick "the best FCC" from a field of 34 contenders that approach orchid perfection? And yet, the magnificent flowers of *Cattleya gaskelliana* f. *alba* 'Janice', FCC/AOS, exhibited by Julio David Rios, Isabela, Puerto Rico, at the Mayaguez Orchid Society Show in Mayaguez, Puerto Rico, embody perfection within the species and help us understand how *C. gaskelliana* became a cornerstone for the breeding of cattleyas. It also reminds us that a magnificent clone of an orchid species can hold its own alongside its contemporary progeny. The well-balanced proportions of this enormous flower's broad sepals and petals; its full, ruffled lip; its pureness of color perfectly complemented by the bright yellow throat; and its terrific substance clearly visible in Irma Saldana-Selles' evocative, almost three-dimensional photography all come together to validate that this flower deserves to reign among the best of the best.



[12] MILTON CARPENTER AWARD

What's in a name? Now that both *Cochlioda* and *Odontoglossum* have been reduced to synonymy with *Oncidium*, what was once a *Lagerara* (*Aspasia* × *Cochlioda* × *Odontoglossum*) is now just *Aspasium*. However, there is nothing "just" about *Aspasium* Lovely Morn, AD/AOS (*Onc.* Lovely Morning × *Asp.* Tight Jeans), hybridized by Glen Barfield of Orchidworks, Hakalau, Hawaii, and exhibited by Helmut Röhrli, La Jolla, California, at the Pacific South Center's monthly judging in San Marino, California. These exquisitely patterned flowers, documented by the crisp photograph of Arthur T. Pinkers, display some of the best color and floral qualities of such classic hybrids as *Oncidium*² Stropheon (Opheon × Robert Strauss). In this case the Award of Distinction (AD), which goes to both the exhibitor and the hybridizer, recognizes adding "warmth tolerance to hybrids with *Odontoglossum*-type flowers." It is a perfect match for the Milton Carpenter Award, which honors his goal as a hybridizer to create warmth-tolerant *Oncidium* intergenetics.

²Formerly *Odontoglossum*.



13

[13] MARIE AND JAMES RIOPELLE AWARD

This year's James and Marie Riopelle Miltonia Award is no stranger to the judging table. *Miltoniopsis* Arthur Cobble Dick 'Camano Joy', FCC/AOS (*vexillaria* × Meadowdale), has received three AOS flower-quality awards over the past 13 years — each one going to a different exhibitor. First receiving an Highly Commended Certificate (HCC) in 2000 and then an Award of Merit (AM) in 2008, it finally received its FCC/AOS under the careful culture of Larry Cox of Miami, Florida, an area not noted for its *Miltoniopsis*-friendly climate. The award record, with its commanding photograph by Greg Allikas taken at the Florida-Caribbean Center's monthly judging in Miami, Florida, draws us into the fine form and clear coloration of this flower evident even in the first award. The three awards taken as a whole document for us that as the plants matured the size of the flowers increased more than 20 percent in all directions, all while maintaining a good flower count per inflorescence. One final note — FCCs to *Miltoniopsis*³ are rare. Since 1965 only nine *Miltoniopsis* have received this level of acclamation and only two plants in this century have been thus recognized. Prior to that the last two FCCs awarded to this genus took place on May 23, 1979, to plants belonging to none other than Oregon's James Riopelle.

³Formerly included in *Miltonia*.



14

[14] ROBERT B. DUGGER AWARD

I've often wondered where the brilliant neon hues come from when I see plants such as this year's Robert Dugger Award winner, *Odontoglossum* Stroperry 'Twilight Treat', AM/AOS (Perryanum × Stropheon). Recent awards to the species building blocks of these hybrids — *Odontoglossum crispum* and *Odontoglossum nobile* (syn. *pescatorei*) — present us with images of beautifully formed flowers in shades of white. But we know, based on the paintings of older clones originating in England, that potential for intense colors exist and that it is just waiting to express itself through the luck of the DNA draw aided by the expert culture of individuals like Mario and Conni Ferrusi, Fenwick, Ontario. The fluorescent nature of these striking, flat, magenta flowers with their large, haloed, nearly symmetrical burgundy blotches in the center of all segments and brilliantly contrasted by the lip's large yellow crest is beautifully captured in Jay Norris' stunning photograph. It was exhibited at the London Orchid Society Show in London, Ontario.



15

[15] BENJAMIN C. BERLINER AWARD

While hybrids within the genus *Lycaste* are frequently associated with large flowers derived from *Lycaste skinneri*, there are many benefits to be found in the hybrids made with lesser-known or smaller-flowered species. Case in point: *Lycaste* Garfield 'Jardin Botanique de Montreal', CCE/AOS (*dowiana* × *deppeii*). When exhibited by the Jardin Botanique de Montreal, Quebec, in 2010 at the Ottawa Orchid Society Show in Ottawa, Ontario, the plant, bearing 110 flowers and buds on a leafless, 22-growth plant, received a Certificate of Cultural Merit (CCM) of 83 points. Exactly one year later to the date the same plant filled a pot nearly 50 percent bigger than the previous award and bore 197 flowers and buds with numerous immature inflorescences emerging — nearly twice as many. To capture this achievement, Michael MacConaill's photograph gives us an aerial view of a plant completely enveloped in floral splendor.

[16] W.W. WILSON AWARD

Superb, striking flowers: these words only begin to scratch the surface when used to describe *Paphiopedilum* Prince Edward of York 'Shih-Yueh', FCC-CCE/AOS (*rothschildianum* × *sanderianum*), Grand Champion of the 2011 Taiwan International Orchid Show, Tainan, and this year's recipient of the W.W. Wilson Cyripedioideae Award. To exhibit a plant of this venerable, often slow-growing cross with sufficient mature growths to produce four inflorescences bearing 19 flowers is cause for celebration; that these 19 colorful, perfectly formed and presented flowers of FCC quality generate a virtual wall of great strength and grace is nothing short of miraculous. Congratulations to the exhibitor, Shih-Yueh Orchids, Kaohsiung, Taiwan, for this amazing achievement and many thanks to the photographer, Jea Shang Photography, for capturing the poetry and grandeur of this plant and enabling us to share in the wonder.



Miltonia moreliana 'Jackie's Pride', FCC/AOS

TEXT BY JACKIE WOOD/PHOTOGRAPH BY GREG ALLIKAS

Measurements in cm: natural spread 10.5, natural spread vertical 12.5; dorsal sepal width 2.5, dorsal sepal length 5.5; petal width 2.6, petal length 5.4; lateral sepal width 2.5, lateral sepal length 5.6; lip width 6.6, lip length 7.1.

Description: Four incredible, large, round, very flat, vibrantly colored flowers and eleven buds on 15 upright inflorescences; sepals and petals vibrant, rich plum purple; large, dramatically contrasting lip, rich lavender veined darker plum purple; keels white overlaid yellow apically; column white, anther cap blushed plum; substance very firm; sepals and petals satiny; lip crystalline.

Miltonia moreliana 'Jackie's Pride', FCC/AOS (91 points). Awarded at the West Palm Beach Judging Center on July 28, 2012. Exhibited by Jackie Wood.

¹Formerly *Miltonia spectabilis* var. *moreliana*.

BEGINNER'S LUCK? I'D LIKE TO THINK HAVING MY FIRST PLANT AWARDED would have been satisfaction enough, but to hit a homerun with a First Class Certificate (FCC) was overwhelming. Sitting on the judging table, I thought my *Miltonia moreliana*¹ was indeed an attention-getter. It was nominated for screening and, much to my surprise and delight and after some intensive scrutiny by a team of judges, it received an FCC of 91 points. Not only was it a thrill for me to have the plant awarded, but that award was my first American Orchid Society flower-quality award.

Back in my second year as an AOS student judge, we studied the Oncidiinae and I chose to do my student presentation on "Warm Growing Miltonias." In doing my research, I discovered the depth of beauty and size of *Milt. moreliana*, but there was no way that I could imagine or anticipate the glory of this beautiful flower from the photographs and all of the reading material until I actually saw a live plant at the East Everglades Show in South Florida in November 2010. It was then that I decided I had to have one, and I made it my mission to somehow, somewhere find one of those beauties and make it my own. The Redland International Orchid Festival at the Fruit and Spice Park in Homestead, Florida, provided the opportunity I had waited for, and I brought my new treasure home.

Before the annual business meeting and center judging for the West Palm Beach Judging Center, I was frantically running around early in the morning trying to get organized for the drive to Flamingo Gardens in Davie, Florida. As a third-year student judge up for elevation, I was so busy I almost forgot that I was planning to bring in my plant to put on the judging table. I had been keeping an eye on my *Milt. moreliana* all week to see if any of the buds were opening, and if they would be worthy of judging. By Saturday my patience was rewarded with enough open flowers and I thought they were stunning. I didn't know if the judges would be as impressed as I was, but the blooms were a personal thrill for me.

For tropical growers, miltonias and miltoniopsis are often pipe dreams of color that do not come true in our warm climates. *Miltonia moreliana*, a warm-growing Brazilian species, is, however, certainly worth considering, and I wouldn't trade mine for the world. Participating in judging as an apprentice and student judge for more than three years made me a tougher judge of my own plants, but now I have the confidence to pull out the stops and bring more plants for judging in the future. Maybe you should too.

Jackie Wood is a probationary judge with the AOS West Palm Beach Judging Center. She started as a hobbyist in the late 1990s after being invited as a guest on a Boca Raton Orchid Society bus trip to the Redland International Orchid Festival. She has since developed a passion for orchid species and has a large collection of Phalaenopsis, Dendrobium, Bulbophyllum, Stanhopea and Cattleya species. She is involved with the Boca Raton Orchid Society and the AOS. Boca Raton, Florida (email bocaorchidlady@aol.com).



Incomparable



[1] *Phalaenopsis* Lioulin Moon 'OX 1533',
FCC-CCE/AOS (92 points) (Lioulin King x
Lioulin Venus). Grower: OX Orchids Farm.
Photograph by Jea Shang Photography,

The American Orchid Society's First Class Certificates of 2012

BY KATHY BARRETT



ERNEST HETHERINGTON OF ARCADIA, CALIFORNIA, ONCE SAID THE AOS should recognize the “Breeder–Owner–Handlers” of the orchid world. It’s a term taken from the world of show dogs. National kennel clubs recognize the individuals who not only show their dogs for awards but also go through the trouble of improving the breed. In the orchid world this improvement can be had through a variety of means: line-breeding select plants for multiple generations, treating flasks to induce a change in the chromosome count — called polyploidy — and the most difficult route of all, knowing your clones. Simply put, it’s knowing which individuals to breed together in order to attain something better than was there before. Undoubtedly each of this year’s First Class Certificates¹ (FCCs) is the product of strong selective-breeding programs, but let’s focus on five that demonstrate the importance of making relationships and knowing your clones.

Howard Liebman, MD, Pacific Palisades, California, took his darkest flower of *Cyrtorchilum macranthum* and paired it with the largest one owned by Tom Perlite, San Francisco. Bob Hamilton, Berkeley, treated the resulting flasks with oryzalin to try to convert some seedlings to tetraploidy. One of the resulting plants is *Cyr. macranthum* 'Rustic Perfection', FCC/AOS (91 points), which demonstrates a depth of color and improved form unlike any other awarded *Cyr. macranthum*. Liebman writes, "I have been making *macranthum* and *Cyrtorchilum* crosses for nearly 30 years. The FCC was a cross made between an excellent Ecuadorian form of *Cyr. macranthum* bred by Tom and a very fine Peruvian form of *macranthum* with very dark sepals. The seed was treated by Robert Hamilton in an attempt to convert to a 4N variety (I have not yet counted the plant). Of the seedlings of cross that I have bloomed and Tom has bloomed, this was the only exceptional plant. Since I grow over 500 *cyrtorchilums* and nearly 40 selected *macranthums* (many with AOS awards), this plant is heads above all the others."

In a personal conversation, Perlite of Golden Gate Orchids said he agreed about the flower's quality.

2012's highest score is for *Bulbophyllum* More Than Aghast 'A-Doribil Ruby', FCC/AOS (*agastor* × *echinolabium*) (94 points), exhibited by Bill Thoms and Doris Dukes of Valrico, Florida. In terms of AOS awards this is a successful hybrid, having received many solid Awards of Merit (AMs) and Certificates of Cultural Merit (CCMs) over the past year and a half. It's the product of *Bulb. agastor* 'Magnifico', CBR/AOS, a present from the late Jo Levy, Memphis, Tennessee, the queen of bulbophyllum growers, and *Bulb. echinolabium* 'Near Fan', a clone so named because it grows near the fan in the greenhouse. Thoms says although he has never shown the clone 'Near Fan' for an award it has a pretty good shape and a very red color. The

¹To receive a First Class Certificate award for flower quality from the AOS, a flower must score between 90 and 100 points on a scale from 1 to 100 as judged by a team comprising at least two accredited judges and one probationary judge. The individual scores are averaged; scores of 89.5 are rounded up to 90. There were 37 such awards in 2012.

²Hans Burkhardt registered the grex *Paphiopedilum* Johanna Burkhardt. With few exceptions, the parents of orchid hybrids are registered at the species or grex level (i.e., *rothschildianum* × *adductum*). However, these intensely colored cultivars of *Paph.* Johanna Burkhardt appear to owe their color intensity to a varietal form of *adductum* (var. *anitum*) that is itself intensely colored. The cultivars of *Paph.* Johanna Burkhardt discussed here all have *Paph. adductum* var. *anitum* as the *Paph. adductum* parent.



2 ERNEST WALTERS

Bulb. agastor parent is easy to grow and blooms sporadically throughout the year with several nickel-sized flowers on a plant with up to 8-inch (20-cm) leaves. The grex does not carry forward the fragrance of the *Bulb. echinolabium* parent. He grows his bulbophyllums in plastic pots and Chilean sphagnum moss.

James Fang of Hilo Orchid Farm, Hawaii knows his clones. He received three FCCs on *Paphiopedilum* Johanna Burkhardt² (*rothschildianum* × *adductum*). The clone 'Black Hole', an upgrade from a previous AM of 87 points to a FCC of 92 points, is followed by 'Gold Rush', FCC/AOS (91 points) and 'Black Diamond', FCC/AOS (90 points). Fang says these were bred in Taiwan from flasks imported to and grown in Hawaii. The clones 'Black Hole' and 'Gold Rush' were from the same flask, code "#15," which are selected *Paph. rothschildianum* ('Rex', FCC/AOS ×

'Mont Millais', FCC/AOS-RHS) crossed to *Paph. adductum* var. *anitum* 'Sunlight', BM/TPS (Bronze Medal/Taiwan Paphiopedilum Society), done by Sunlight Orchids in Taiwan from the breeding efforts of Terry Root in Salinas, California. The clone 'Black Hole' received its AM on second flowering and FCC on the third flowering, when the flowers got bigger and one more flower was added to the spike. The clone 'Gold Rush' also received its FCC on the second flowering.

Fang's personal favorite is 'Black Diamond', FCC/AOS; the flower is very rich golden yellow with the dark black stripes and mask on the dorsal surface that just make an incredible contrast. "When I saw it at first flowering I knew its color is very special," he says. The clone 'Black Diamond', FCC/OS, is also from Taiwan's breeding, but a different breeder code ("#43"). The *Paph. rothschildianum* is from



JAMES OSEIN

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- [2] *Bulbophyllum* More Than Aghast 'A-doribil Ruby', FCC/AOS (94 points) (*agastor* × *echinolabium*). Grower: Bill Thoms and Doris Dukes.
- [3] *Lycaste* About Sunset 'Gerri Male', FCC/AOS (93 points) (Chita Sunset × Alan Salzman). Grower: Stephen Male/Fishing Creek Orchids.
- [4] *Cyrtorchilum macranthum* 'Rustic Perfection', FCC/AOS (91 points). Grower: Howard Liebman, MD.



ARTHUR PINKERS

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- [5] *Paphiopedilum* Johanna Burkhardt 'Black Diamond', FCC/AOS (90 points) (*rothschildanum* × *adductum*).
Grower: Hilo Orchid Farm.
- [6] *Paphiopedilum* Johanna Burkhardt 'Gold Rush', FCC/AOS (91 points).
Grower: Hilo Orchid Farm.
- [7] *Paphiopedilum* Johanna Burkhardt 'Black Hole', AM-FCC/AOS (92 points).
Grower: Hilo Orchid Farm.

the same breeding line as #15, but the difference is the *Paph. adductum* var. *anitum* used is the 'Bear', GM (Gold Medal)/TPS, clone that received the highest gold medal awarded from Taiwan.

Fang writes, "Our nursery is on the cooler side of the Big Island, we have very mild weather to grow and breed our *Paphiopedilum* and *Oncidiinae* intergenerics here. We try to keep our paphs moist most of the time and feed them lightly every other watering. I have bred with these plants for the past two years and I think they all need to have a break to rest and be repotted after this flowering season."

Every year there are a few instances where a previous award gets upgraded.

I've already mentioned the upgrade on *Paph. Johanna Burkhardt* 'Black Hole', AM-FCC/AOS. *Dendrochilum magnum* 'Arnie', FCC/AOS (93 points), received an HCC in 2008. This year it was upgraded to a 93-point FCC and is tied with *Lycaste* Abou Sunset 'Gerri Male', FCC/AOS, for the second highest scoring FCC in 2012. Owner Arnold Gum of San Diego, California, says it's a monster of a plant, easily 25 percent bigger than specimens of *Ddc. magnum*. It fills a pot to the edge easily and blooms with a massive inflorescence and is also hugely fragrant. If that's not quality, I don't know what is.

Lycaste Abou Sunset 'Gerri Male', FCC/AOS (Chita Sunset × Alan Salzman)



ARNOLD GUM

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BRIAN MONK

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ARNOLD GUM

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ARNOLD GUM

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(93 points), was one of 40 seedlings exhibitor Stephen Male of Harrisburg, Pennsylvania, purchased from James Rose of Cal-Orchid, Inc., Santa Barbara, California, in 2009. Rose has developed relationships with the cutting-edge Japanese breeders of lycastes and selects seedling crosses he hopes will produce excellent flowers. This clone flowered for the first time with one flower in February 2012, when it was awarded, and then flowered again in August 2012 and again in February 2013, when it produced four magnificent flowers. Male says, "I grow it in a greenhouse in Harrisburg, Pennsylvania, under intermediate light conditions with a temperature range of 60–88 F. It is in a clay pot in a bark, sponge rock and charcoal mix-

ture. It is grown on the wet side when growth is rapid and fertilized with Nutricote as well as a soluble fertilizer. The plant is hung to increase air flow around the plant."

Congratulations to all the exhibitors whose excellent growing resulted in receiving FCCs on their plants. Now I have to restrain myself from going out to the greenhouse and throwing away all my orchids because they just don't match up to the beauties pictured on these pages.

Kathy Barrett, who's been growing orchids since 1995, lives in Northern California. She wrote about the San Jose Orchid Exposition in the October 2012 issue of Orchids (email mormodes@hotmail.com).

- [8] *Dendrochilum magnum* 'Arnie', HCC-FCC/AOS (93 points).
Grower: Arnold Gum.
- [9] *Cynoches* Jean E. Monnier 'Elektra', FCC/AOS (90 points) (*barthiorum* × *cooperi*). Grower: Larry Cox.
- [10] *Cynoches* Kevin Clarke 'Sunset Valley Orchids', HCC-FCC/AOS (90 points) (*warscewiczii* × *herrenhusanum*).
Grower: Fred Clarke/Sunset Valley Orchids.
- [11] *Cynodes* Chiriqui 'Sunset Valley Orchids', FCC/AOS (90 points) (*Cyc. warscewiczii* × *Morm. hookeri*).
Grower: Fred Clarke/Sunset Valley Orchids.



12 JEA SHANG PHOTOGRAPHY

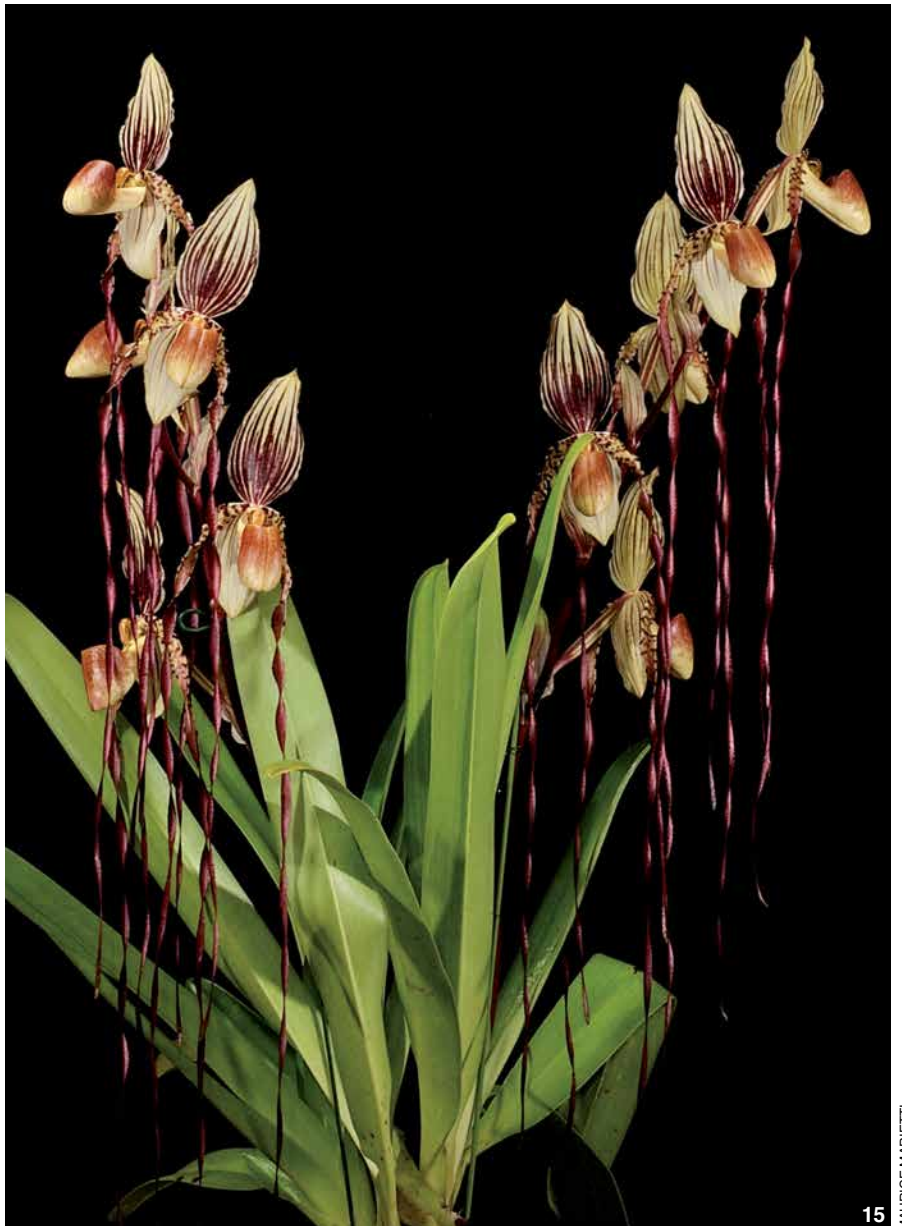


13 ERNEST WALTERS



14 LYNN O'SHAUGHNESSY

- [12] *Paphiopedilum charlesworthii* 'Miao Hua Star', FCC/AOS (90 points).
Grower: Miao Hua Orchids.
- [13] *Paphiopedilum* Lynleigh Koopowitz 'Springwater', FCC/AOS (91 points) (*delenatii* × *malipoense*). Grower: Thanh Nguyen/Springwater Orchids.
- [14] *Paphiopedilum charlesworthii* f. *album* 'Sam's Choice', FCC/AOS (90 points).
Grower: Sam Tsui/Orchid Inn.
- [15] *Paphiopedilum* Kemp Tower 'Joan', FCC/AOS (91 points) (Prince Edward of York × *philippinense*). Grower: Joan and Steve Fearheller.



15 MAURICE MARIETTI

JEA SHANG PHOTOGRAPHY



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ARTHUR PINKERS



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MAX THOMPSON



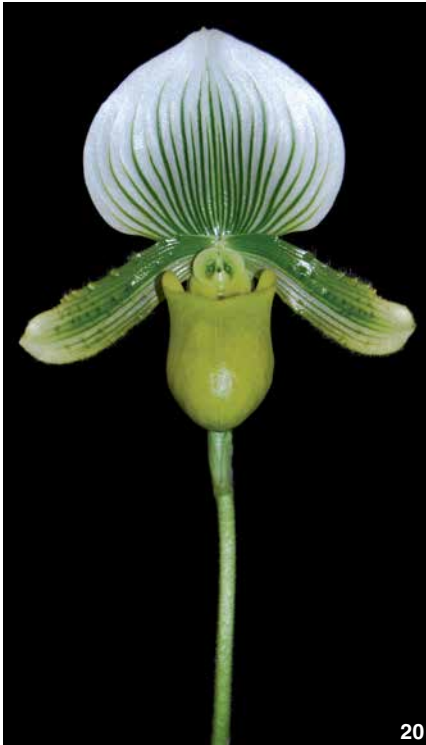
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MAUREEN PULIGNANO



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MILTON WITTMAN



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[16] *Paphiopedilum* Vintage Venus 'MH-3', FCC/AOS (90 points) (*venustum* × Vintage Harvest). Grower: Miao Hua Orchids.

[17] *Paphiopedilum glaucophyllum* var. *moquetteanum* 'Baker's Passion', FCC/AOS (91 points). Grower: Brent Baker.

[18] *Paphiopedilum* Walnut Valley Predator 'Max & Bryon's Best', FCC/AOS (90 points) (Wayne Booth × Via Quatal). Grower: Max Thompson and Bryon Rinke.

[19] *Paphiopedilum malipoense* 'Sam's Choice', FCC/AOS (92 points). Grower: Sam Tsui/Orchid Inn.

[20] *Paphiopedilum* Hilo Citron 'Alex Manuel', FCC/AOS (90 points) (Hsinying Citron × Alma Gevaert). Grower: Alexander Manuel.



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GREG ALLIKAS



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RAMON DE LOS SANTOS



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NICOLAS GOMEZ



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JORGE CARLOS

[21] *Miltonia moreliana*³ 'Jackie's Pride', FCC/AOS (91 points). Grower: Jackie Wood.

[22] *Masdevallia* Ziegler's Love 'Golden Gate', FCC/AOS (90 points) (Pixie Lavender × Falcon Sunrise). Grower: Golden Gate Orchids.

[23] *Dracula gorgona* 'San Isidro', FCC/AOS (91 points). Grower: Daniel Piedrahita.

[24] *Masdevallia* Fuchsia Dawn 'Gemma', FCC/AOS (91 points) (*coccinea* × Pixie Shadow). Grower: Bernd Martin.

[25] *Masdevallia* Billion-Nims 'Golden Gate', FCC/AOS (90 points) (Falcon Sunrise × Annette Hall). Grower: Golden Gate Orchids.



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KEN JACOBSEN

³Formerly *Miltonia spectabilis* var. *moreliana*.



NICOLAS GOMEZ

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JORGE CARLOS

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- [26] *Stanhopea platyceras* 'Orquifollajes', FCC/AOS (90 points). Grower: Orquifollajes LTDA.
- [27] *Rossioglossum* Rawdon Jester 'Mario Palmieri', FCC/AOS (90 points) (*grande* × *Williamsianum*). Grower: Mario and Silvia Palmieri.



28 RAMON DE LOS SANTOS



29 JEA SHANG PHOTOGRAPHY



30 MIKE PEARSON



31 JEA SHANG PHOTOGRAPHY

- [28] *Phalaenopsis cornu-cervi* f. *chattaladae* 'Monster', FCC/AOS (91 points).
 Grower: Ramon de los Santos.
- [29] *Phalaenopsis*⁴ OX Lion King 'OX 12003',
 FCC/AOS (90 points) (OX Spot Queen
 × OX King). Grower: OX Orchids Farm.
- [30] *Phalaenopsis*⁴ Chian Xen Super Idol
 'CX255', FCC/AOS (90 points) (Chian
 Xen Mammon × Luchia Lip).
 Grower: Orchidaceae.
- [31] *Phalaenopsis*⁴ Lioulin Lovely Lip '#1',
 FCC/AOS (90 points) (Yu Pin Fireworks
 × Chian Xen Piano). Grower: Champion
 Orchid Nursery.

⁴Awarded as *Doritaenopsis*.



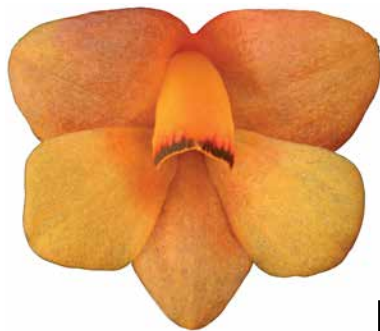
ALBERTO RODRIGUEZ

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GREG ALLIKAS

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RAMON DE LOS SANTOS

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MICHAEL BLIETZ

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BRYAN KUROWSKI

36



ARNOLD GUM

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[32] *Rhyncholaeliocattleya* Taichung Beauty 'Chi-Ming', FCC/AOS (90 points) (Pamela Finney x Elegant Dancer). Grower: R.F. Orchids, Inc.

[33] *Cattleya* Vivian Johns 'Katarina', FCC/AOS (90 points) (Mrs. Mahler x *violacea*). Grower: Peter von Scholl.

[34] *Dendrobium cuthbertsonii* 'Buster', FCC/AOS (91 points). Grower: Golden Gate Orchids.

[35] *Dendrobium* Valley Isle Pink 'Sunshine', FCC/AOS (90 points) (Burana White x Odom's Goldmine). Grower: Sunshine Orchids of Maui.

[36] *Rhyncholaeliocattleya* Kure Beach 'Peggy's Lenette #2', FCC/AOS (90 points) (Fortune x Iliad). Grower: Debra Baker.

[37] *Dendrobium* Hibiki 'Sandra's Delight', FCC-CCE/AOS (92 points) (*bracteosum* x *laevifolium*). Grower: Helen Pfister.

Growing for Perfection



[1] (above) *Dendrobium epidendropsis* 'Tristan Nicholas', CCM/AOS, is found in the Philippines and Java at elevations of 3,000 feet (915 m). The author grows this semideciduous plant in a basket with sphagnum moss to accommodate its pendulous canes. All plants grown by David and Joan Rosenfeld.

[2] *Dendrochilum filiforme* 'Minnie', CCM/AOS, is native to the Philippines and grows at slightly lower elevations than *Dendrochilum tenellum*, which is shown on page 230. There are 100-plus flowers on an inflorescence and when this specimen was awarded it had 30,000 flowers.

THE ULTIMATE ACCOLADE THAT AN ORCHID GROWER CAN RECEIVE IS when a fellow grower says “congratulations on your recent cultural award.” There are two AOS awards granted for extraordinary orchid culture: Certificate of Cultural Merit (CCM) and Certificate of Cultural Excellence (CCE). The ultimate goal of orchid growers should be to receive a cultural certificate. The vast majority of orchid enthusiasts do not even know that such an award is possible. They are just happy to grow their plants successfully and have the satisfaction of blooming them every year. While this is a fine goal, growing a plant to perfection is a special achievement.

There are two main types of AOS awards. The one most of us know about is a flower-quality award. This is achieved by growing an orchid whose flowers the judges deem to be of exceptional quality. These awards are divided into three groups: Highly Commended Certificate (HCC), Award of Merit (AM) and the best of all, a First Class Certificate (FCC). Only a few plants receive a FCC commendation each year. To achieve a flower award requires acquiring and growing species or hybrids with exceptional characteristics in the categories of color, size, shape and number of flowers on an inflorescence.

Secrets Shared to Help Garner Cultural Awards

TEXT BY DAVID ROSENFELD/PLANT PHOTOGRAPHS BY MAURICE MARIETTI





[3] *Dendrobium lichenastrum* var. *prenticei* 'David's Gherkin', CCM/AOS, is native to Northeast Australia where it grows at low elevations. This plant is mounted on a 7- x 4-inch (18- x 10-cm) piece of cork and grown in bright light.

[4] *Dendrochilum tenellum* 'Susan Beth', CCE/AOS, is endemic to the Philippines at elevations of 3,000–7,000 feet (915–2,130 m). It is more compact than *Ddc. filiforme*, and the inflorescence arises near the apex of a new leaf. This specimen is grown in medium to high light in a 10-inch (25-cm) clay pot with tree fern in the intermediate room of the greenhouse with many miltoniopsis and other orchids needing similar conditions. The room does not get above 80 F (27 C) in the summer, and during the winter the temperatures range from lows of 60 F (16 C) to days around 68 F (20 C).

If you want to receive a CCM or CCE you do not have to have an orchid with a high quality flower, you just have to grow it better than almost anybody else. To receive a CCM you must obtain between 80 and 90 points and for a CCE, greater than 90 points. If the judges feel that a species or hybrid



brought in for evaluation might qualify for one of these awards, the first thing they will do is consult the AOS database to see if any plant of that species or hybrid has received a cultural award. They will read the plant description, which will include plant size, pot size, number of growths, number of inflorescences and flowers per inflorescence. They refer to the AOS photographs. Besides the characteristics described above, the judges will inspect to see if the flowers are in perfect condition and present themselves attractively all the way around the plant. If the species or hybrid has not received a previous award, they will review the AOS database for similar species and hybrids. If you are lucky, one of the judges may nominate the plant for a cultural award. Then a plant judging form will be distributed and collated to determine if an award should be conferred and of what type.

Now that you have some idea about the process, how can you go about garnering one of these special awards? First of all, plants can be large or small. Some orchids are naturally large plants with tall spikes. We had a *Phragmipedium* Schoderae 'David's Dream' (*caudatum* × *Sedenii*) awarded with a CCM of 84 points. This plant had 13 flower spikes and many other old growths in a 12-inch (30-cm) pot. Each flower spike

had only one flower, but when the judges reviewed their data, the plant surpassed almost all previously awarded plants of the same hybrid. Thus, an award was granted. The biggest problem was getting the plant to judging in our SUV. It was too tall to be placed in the rear compartment and it had to sit on the floor of the passenger front seat.

Small plants can also be awarded. We have a *Dendrobium aberrans* 'Snow Storm', CCM/AOS (82 points), a warm- to intermediate-growing miniature of the *Latourea* section from New Guinea. It was grown in a 4-inch (10-cm) basket and had 44 flower spikes with 204 small 3/4-inch (1.9-cm) white flowers. No orchid of that species had ever received a cultural award and the judges awarded our specimen. Another example is our *Dendrobium lichenastrum* var. *prenticei* 'David's Gherkin', CCM/AOS (85 points). This plant was mounted on a small cork slab and the whole specimen — with its 285 3/8-inch (1-cm) gherkin-shaped leaves — fit in the palm of my hand. It had only 36 flowers measuring approximately 4 mm and 10 buds when awarded — but that was more than had been bloomed by anyone.

As suggested by the above awards, flower size is not a criterion for a cultural award. A profusion of tiny flowers in vast numbers may be all that is required. Two



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other examples are *Dendrochilum tenellum* 'Susan Beth', CCE/AOS (92 points), that had 390 inflorescences with 16,000 tiny 3-mm flowers and *Dendrochilum filiforme* 'Minnie', CCM/AOS (86 points), that had 285 inflorescences with 30,000 5-mm flowers.

The flowers and the plant do not have to be beautiful. We brought a semideciduous *Dendrobium epidendropsis* 'Tristan Nicholas', CCM/AOS (82 points), with unattractive yellowish green flowers with faint brown striping to be evaluated. However, it had 325 flowers and 100 buds on 30 short pendulous spikes. No plant of this species had ever received a cultural award. One of the judges commented it was one of the ugliest plants he had ever seen. That being said, it was still awarded because of the excellence of the growth of the plant and number of flowers.

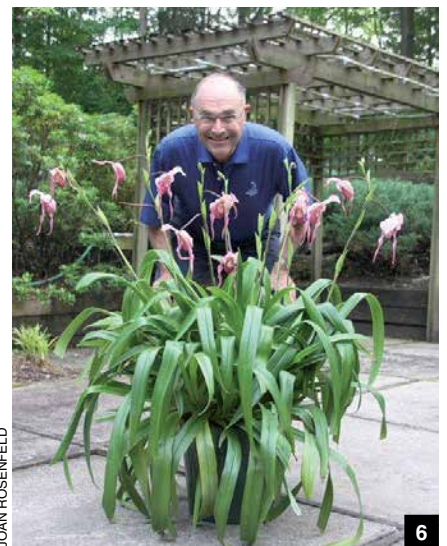
How can you obtain the ultimate orchid award — a cultural certificate?

Begin by understanding your growing conditions. Do you have a greenhouse or do you grow under lights or in a windowsill? What temperatures do your plants need to thrive? Do you grow cool, intermediate or warm tolerant plants best?

SELECTING A PLANT Probably the most important criterion is plant selection. Choose hybrids or species that

you can grow well under your particular conditions and you have been successful in growing and blooming in the past. Next, research plants that have a propensity to form multiple new growths after every blooming. You do not want a plant that just sends out one new growth each year. Ideally these new growths should eventually extend out in all directions giving the plant the required symmetry. Plant size is important, especially if you have limited growing space. You do not want to buy and grow a plant that does not reach specimen size until it is in a 10-inch (25-cm) pot if you are growing in a windowsill. It is also desirable to purchase plants with long-lasting flowers. Orchids with flowers that last less than two weeks will be difficult to get to judging centers in perfect condition. If you feel you do not have the knowledge needed to select plants that grow and divide rapidly and have long lasting flowers, ask members of your local orchid society and commercial growers for advice.

GROWING A SPECIMEN Once you have purchased your plant, what do you have to do to next? Growing a specimen plant, first of all, takes lots and lots of patience. You are going to have to likely wait many years for your plant to become a specimen. I have had to wait more than



JOAN ROSENFELD

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[5] *Phragmipedium Schroderae* 'David's Dream', CCM/AOS (*caudatum* × *Sedenii*), is a 19th century cross. This specimen, which is grown in a mixture of 4½ parts medium bark, 4½ parts fine bark, ½ part perlite and ½ part charcoal, is watered twice a week and receives the same light as the cattleyas.

[6] The author with the specimen of *Phragmipedium Schroderae* 'David's Dream', CCM/AOS.



[7–8] *Promenaea* Chameleon (Limelight × *guttata*) is a miniature originated by the late Ben Berliner, MD, and registered in 1998. Shown here are the specimen [7] and a flower [8] of the clone ‘Apple Green’, CCM-AM/AOS. This plant grows in a mix of one part tree fern and three parts sphagnum moss in a clay pot and is watered twice a week. It’s in the same room as the dendrochilums, but in low to medium light.



10 years for some of our awarded plants to reach specimen size. During that time you will have to continually nurture your plants. Observe the conditions they thrive in. Repotting at regular intervals will be necessary and can vary greatly depending on the growing conditions, potting media and the genera. For example, if you are growing an orchid mounted and the mount is large enough, you may not need to remount for many years. Other genera, such as *Miltoniopsis*, *Masdevallia* and many paphiopedilums will require repotting every year. Repotting should be done when the plant is in maximal growth. Ideally this is when the new growths are just starting to put out new roots. This critical time will vary dramatically, even among the members of a single genus, such as *Cattleya*.

How do you know when a plant is approaching specimen size? By far the best way is to have access to a program such as the American Orchid Society’s *AQ Plus*. This program has more than 50,000 photographs and descriptions of awarded species and hybrids, both cultural and flower. It will only take a few minutes of research to determine whether your orchid might qualify.

Maybe the plant has enough flowers for only a CCM, which is still a great achievement. Remember, if the plant receives a CCM and you continue to grow it well it may eventually reach CCE quality.

PREPARING FOR SHOWING Okay, you think you have an awardable plant. Now it’s time to prepare it for judging. Old unflattering growths and leaves should be carefully removed. As the flower spikes emerge and grow they may need attractive staking so that the flowers present themselves with the most desirable effect. (It’s best to insert stakes into a container when the spikes appear so you can train them.) Many plants will require no staking and will look better without support. Judges like to see symmetry with flower spikes relatively uniformly positioned around the plant. Remember it is the number of flowers and presentation that is important. You might be lucky and have a plant such as our *Promenaea* Chameleon ‘Apple Green’, CCM-AM/AOS (Limelight × *guttata*) (86, 82 points), which received both a cultural award and an Award of Merit. This is certainly the exception.

Sometimes the most frustrating thing is the coordination of bringing the plant

into maximal condition at a time when there is an AOS judging in your area. This is especially a problem with genera that only will be in perfect condition for a short time. For many orchids, this may be only a week. After that the flowers rapidly begin to deteriorate or fall. This is exasperating, especially if you have been growing the plant for many years. Sometimes, depending on where you reside, you can go to a judging center further away that has a judging when the plant is perfect. This might require a drive of several hours. We had great difficulty getting our highest-awarded orchid to judging: *Mediodcalcar decoratum* ‘Joan’s Holiday Candy Corn’. It produces $\frac{3}{8}$ -inch (9-mm) strange-looking orange and yellow flowers that look like Halloween candy corn. The flowers only remain in perfect condition for approximately two weeks. Three years ago that required driving to a more distant judging center, but we were thwarted by a blizzard. A year later, the timing of the blooming was just not right. It was lucky for us that we had to wait until December 2011 to successfully get the plant to judging in Philadelphia. It had grown beautifully into a perfect sphere with more than 600 candy corn flowers. The judges were astounded and awarded it a CCE of 94 points. Only a few plants each year will receive an award with a score that high. We were shocked and proud. The judges even clapped when the award was announced.

AT ORCHID SHOWS Orchids are not only awarded at judging centers but also at orchid shows where AOS judging also takes place. You can arrange to have your plant included in your local orchid society’s exhibit. Some shows offer bench judging where individual specimens can be entered. Nothing is more satisfying than being notified that your plant received a cultural award at a show. When you visit the exhibit or table you will see the award papers attached to the plant. An award received at a judging center will only be known by the judges and the other attendees, unless you happen to tell some of your fellow orchidists (or they subscribe to *AQ Plus*).

CLONAL NAMES An extra bonus to receiving a cultural or flower award is the opportunity to give the plant a clonal name. You can select anything you desire from a few nonoffensive words, which might reflect the plant’s beauty, to naming it after a friend or relative. The exception is a clone that previously has been named. After your award has been forwarded to the AOS from the judging center or show, and once you pay a fee, you will be sent an award certificate as recognition of your accomplishment.



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So get started in reaching the pinnacle of orchid culture. There is more to just growing an orchid. There are the cultural awards — CCM and CCE. You can achieve that zenith of the orchid world. All it takes is using your orchid skills to the utmost and, of course, a great deal of patience.

David Rosenfeld is clinical professor of radiology at the University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School and director of pediatric radiology. David and his wife, Joan, have been growing orchids for 35 years. They have a varied collection with approximately 1,000 plants in a 700-square-foot (65-sq-m) greenhouse. 33 Duncan Lane, Skillman, New Jersey 08558 (email orchiddoc@comcast.net).



DAVID ROSENFELD

10

[9] *Medicalcar decoratum* 'Joan's Holiday Candy Corn', CCE/AOS, is a native of highland cloud forests in New Guinea. This specimen is grown in an 8-inch (20-cm) basket in sphagnum moss with a small amount of tree fern and watered or misted daily and placed to receive low to medium light similar to that given the promeneas.

[10] Joan Rosenfeld holds the specimen of *Med. decoratum* 'Joan's Holiday Candy Corn', CCE/AOS. The Rosenfelds have received 40 AOS awards, including more than a dozen cultural awards.

On Being Color Blind



Observations from a Left-Handed Quaker

TEXT BY HOWARD P. WOOD/FLOWER PHOTOGRAPHS BY GREG ALLIKAS



COURTESY ANNE WOOD

I LIKE TO CONSIDER MYSELF LUCKY in, at least until 2009, lacking serious diseases at an advanced age, but in fact I have a significant lifelong disability: hereditary partial red–green color blindness. Indeed, it has had a considerable influence on the course of my life. Color blindness is not uncommon. Besides one of my two brothers, cousins and one or two grandsons, several friends have it, but nobody seems to talk about it. I haven’t seen any literature written by “patients.” Therefore, I’d like to write about how it feels to be so afflicted.

First, a few facts. Red–green color blindness results from a defect in the red-sensitive receptors in the retina. It is genetic, a sex-linked recessive, due to a defect in the x chromosome. (Hemophilia is transmitted in the same way.) Women have two x chromosomes and men have only one x plus one y. This means that my daughter has one good and one bad x and, because the defect is recessive, she is a carrier rather than a case. My three sons and their children are clear, because they received one of their mother’s good x chromosomes and my y. But half of the sons of my daughter will, on average, be cases: half will get her good x, the other half the bad one. The same is true of the sons of my mother’s two sisters: all three were carriers, since my grandfather was a case. The pattern works out as expected in our family. A color-blind woman, a rarity, must have inherited a defective x from each parent: father a case, mother a carrier.

My mother, a nurse, probably did not know her father was color-blind. In my case, she became suspicious when, at about age four, I could not distinguish blood from mud when I came in from play. My father took me down to the famous psychology professor, S.W. Fernberger, PhD, at the University of Pennsylvania, Philadelphia,

and I did my first stint as “Exhibit A.” His class, whom I recall as pretty girls, crowded around as I missorted slips of colored paper and felt important. Drawing pictures was a major preoccupation during my childhood, and, when I could read, I used labeled crayons (I did not realize that their odd names were of mineral pigments.) I easily confused green and brown. I avoided the dark red, madder lake, which seemed dark gray, but I loved bright vermilion. Cobalt blue was easy; I could confuse darker blue with violet. I also played with cubic blocks painted two colors separated diagonally. I considered a yellow and blue block brighter and more interesting than one containing red.

My mother unwittingly bought me watercolor and pastel equipment, which I seldom used. When a school teacher would (fortunately rarely) write in red chalk on a blackboard, I could barely see it except, as I grew older, to notice sometimes a slight difference in focus for the red against the black. The letters seem to appear slightly in front of the board. (This difference in focus, based on wavelength, is real.) Nevertheless, this peculiarity did not affect my life significantly until I became interested in birds.

I am really handicapped in sighting warblers. Many other birds have bits of red that I fail to pick up. For instance, the male of several woodpecker species shows more red on his head than the female. With the redwing blackbird, I see the yellow shoulder stripe but not the red next to it. One of my color-blind first cousins nevertheless became an ace birder, but he seemed to have a lighter case. I have preferred to watch shore and water birds, which can usually be distinguished by pattern. In this instance, I do feel frustrated by my handicap. I have failed to become competent in other skills

[1] Howard Wood at the Ardnamurchan Club, his family’s 100-year-old residence in Nova Scotia where he and his wife, Anne, met as teenagers. “Howard wrote a couple of articles about orchids found there around our tennis court as well as nearby. Howard and I traveled extensively and to all the continents, but his favorite place was there. This undated photograph shows his favorite corner of the porch where he usually could be found studying ferns, terrestrial orchids, carnivorous plants, mosses and anything he had picked up on his walks and put into his plastic bag from the kitchen. Then he — or the rest of us — would put it into a dish garden for the dining room table for all to enjoy,” says Anne.



COURTESY ANNE WOOD

[2] Sailing — a passion shared by Howard and Anne — provided new challenges for the red-green color-blind author.

because I did not practice enough, notably piano playing and ice dancing, but advanced ornithology is hopeless.

In high school, for an art course, I attempted to produce a watercolor painting, and the teacher encouraged me to do more, but I declined, afraid of being humiliated by a laughable color scheme, and also leery about producing something seen as inferior or bizarre. In medical school, I tried one watercolor landscape while on vacation, using only a few arbitrary colors, and people liked it. But I still could not accept the idea of putting on “fake” colors, producing something artificial whose effect on others I’d be unable to judge. I did some work in pencil, ink and charcoal, but these media seemed boring. Thus, during adolescence, I gradually gave up art in favor of black-and-white photography, developing and enlarging my own pictures. Moving on to color photography has caused little difficulty because I do not choose my subjects by color nor do I process the results. My wife’s painting, however, relies heavily on color effects and relationships, which I’m sorry I often cannot recognize.

I was greatly interested in aviation at ages 10 to 14, but my handicap doomed any hope of becoming a pilot. At 16 it was time to drive a car. I was not tested for color. The first question anyone asks me is always, “What about traffic lights?” The yellow is clear, the green looks white and at night the red is bright. The red light by day seems inconspicuous, so I have to assume that an apparently nonfunctioning light is red. The distinction is easier now that the red is always on top. Red stop signs are less con-

spicuous, hence more of a problem, but can be distinguished by their octagonal shape. As with the crayons, I can see a red hue on the orange side, such as vermilion, quite well. True orange I’m likely to mix with green or brown, but my favorite sweater is a mysteriously unmistakable orange.

As a teenager trying to “fit in,” I became interested in clothes and thus aware of my problem. I had to memorize not always reliable rules about what color went with what. For instance, I heard that for unknown reasons a red tie doesn’t go with a brown jacket, but does go with blue. Heather tweeds, happily for me, were in fashion. Here I was at a loss but could assume that the base color would be brown, not red or green, and all mixtures were good. Red and green were not authorized colors for a jacket. Scottish plaid neckties were in fashion; I chose clear colors as in the Royal Stewart, not muted tones as in the Black Watch. When I bought a chocolate-brown worsted suit, I was roundly condemned by an Ivy League connoisseur. I think this was a matter of fashionable color. Similarly, I love bright magenta azaleas, but their color has always been socially rather disreputable. I generally cannot distinguish purple from blue unless they are juxtaposed. I’ve had two (pale) purple ties, but for reasons that mystify me, people considered them “cool.” They just looked blue-gray to me. I’m pleased to have a wife with excellent taste. When matching clothing, I rely on her, not wishing to appear outlandish. Long ago I adopted a policy of black socks. Occasionally, even now, a navy blue one gets mixed in, and sometimes Anne doesn’t notice it.

My difficulty in separating these colors isn’t explained by my red-green defect. Pastel or art shades, such as beige or turquoise, I leave to the ladies.

Another interest that I have shared with Anne is sailing. In this case, I am ultimately disabled because I can’t distinguish red and green buoys marking channels, though lights are easier. Signal flags, as used in the Navy, would be impossible. A popular sport that does not interest me is hunting. I could never be trusted to distinguish a red jacket from the pelt of a deer, but I wear one in the woods in case I need to be rescued.

As I grew older, I developed a strong interest in plants, especially orchids. My chief difficulty in practice is the inability to distinguish orange or red blossoms at a distance, against green leaves. A dark red looks almost black to me. I noticed both of these effects at an orchid show recently, and today could not see the red blossoms on a camellia bush 10 feet (3 m) away. This

difficulty can complicate my botanical slide shows. Orchids are relatively easy because, in their flowers, true reds, blues and greens are rare. I usually confuse blue and purple unless juxtaposed, but purple cloth seems somehow brighter, and purple flowers often have a psychedelic sheen (especially under fluorescent light).

Color-blind people are ineligible to become certified orchid judges, and for this reason among others, I turned my interest toward botany rather than horticulture. (I was dumbfounded to learn that my deceased mentor in orchids, a prominent judge, had successfully concealed his own color blindness.) A red-brown-green color they call “puce” occurs on orchid and other flowers that mimic rotting meat to attract fly pollinators (and usually stink). These look basically gray to me. I am not good at perceiving when one of my plants dies and turns brown. I look for fallen leaves or shriveled stems. In a doubtful case I have to ask, “Is there any green in this one?”

People ask how I dealt with matters of color in my book *The Dendrobiums* (Timber Press, Portland, 2006). In the text I rarely tried to make a color judgment of my own. I am mystified by and hence try to avoid such terms as “mauve,” “amaranth,” “beige,” or even “lavender” and, yes, “orchid.” My editor hired the excellent color technician he uses for his own magazine, which has outstanding illustrations. I have had no complaints about the flower colors.

Color blindness was probably one reason that, though my mother was a nurse and loved medical subjects, as a schoolboy I never considered becoming a doctor. In addition, my father had fainted at the sight of blood and I feared I might do the same. This turned out to be untrue. I ultimately decided that my disability was not necessarily a barrier to medicine. One of my color-blind cousins, however, chose law instead of medicine for that reason, even though he was the son of a doctor. During World War II, I hoped to be a student in uniform. The Navy understandably rejected me but the Army did not. Nobody really believed the idea that color-blind people have a superior ability to detect camouflage, but there is one card on the Ishihara test, which the Navy gave me, where only color-blind people can see the number 5. That one catches malingerers. Many years later, my throat doctor confessed to being color-blind. I believe he succeeded because a red throat has telltale dark lines of expanded blood vessels, and a red, inflamed ear drum loses its shine.

Certainly my disability steered me toward psychiatry. I could have chosen, for instance, radiology, but my personal-

ity is ill-suited for that field. Having this handicap sharpens the other senses, such as in perceiving shading and texture, as well as judging fashion, and even simply watching people's reactions (they are startled by bright red but not green or brown clothing). An animal skin is unlikely to be red or green. Boats, if painted, are never (hardly ever?) brown, seldom green, but often red. Thus, I know what colors I am most likely to encounter in various common situations. For instance, as noted above, true blue is rare in flowers but violet is pervasive. Men's blue-appearing jackets are unlikely to be purple. A tweed fabric is probably brown, not red or green. As implied above, I'm sensitive to shading differences in the same color, such as might occur in patching clothing or repainting a dented car fender.

In psychiatric practice I seldom had a color problem. I cannot tell a red from a blue face (both look gray), but they can be distinguished by context. I once met a friend's mother with a genuinely gray face. She had taken Argyrol nose drops long ago and had "argyria," due to silver deposits in her skin. This drug had been the basis of Dr. Albert Barnes's fortune. I left to others matters of office decor.

One pet peeve of mine is the use of color for illustrative maps or graphs. I have much trouble with a map comparing, in colored lines or areas of color, higher or lower areas of population, disease, rainfall, political preference and so forth. The election coverage involved a lot of this, and not just "red" and "blue" states. A related problem is my frequent inability to detect writing printed in red for emphasis.

In retirement, unlike psychiatric practice, I have to confront my handicap almost daily. People prefer to define or describe things by color. "The red one over there." It's hard (but not impossible) for me to tell whether meat is rare or well done. Nowadays I just have to say, "Sorry, but I can't see red." It has occurred to me only in recent years that having a disability

[3–5] Three pairs of orchid flowers illustrating how they would appear to a person with normal vision [A] and to a person with Deuteranopia, such as Wood had [B].

[3] *Odontioda* Fort Point 'Vision Point', AM/AOS (Florence Stirling × Harrods Forever). Grower: New Vision Orchids.

[4] *Rhyncholaeliocattleya* EZO 'Robin's Magic', AM/AOS (C. Village Chief Cuba × Magic Meadow). Grower: Ralph Brand.

[5] *Paphiopedilum* Gloria Naugle 'Ares', AM/AOS (*rothschildianum* × *micranthum*). Grower: Larry Cox.



should aid me in empathic understanding of people with other afflictions. I'm inspired, in retrospect, by the wife of a visiting psychiatric luminary whom, many years ago, I was trying to help cross a snowy street. I reached for her arm and found nothing. I blurted out, "No arm?" She replied coolly, "Not on that side."

Now that I think about arms, being left handed has further complicated my life in less important ways — but that would be another, less interesting, story. It is probably true that everyone would like to be considered memorable, or at least distinctive. My appearance and behavior are not unusual. Nevertheless, I can take consolation from the fact that I am probably the only color-blind, left-handed Quaker you will meet.

More seriously, I can say that color blindness sabotaged two of my strongest childhood interests, graphic arts and aviation, but facilitated my final career choice. I believe that I lacked the creativity to be an outstanding artist, and I did not savor the risks involved in becoming a pilot. As I matured, I considered other motivational factors. I had humanitarian and medical family traditions and the sense that my best "suits," aside from an optimistic temperament, were probably information gathering and verbal communication. Thus, I turned to something intellectually challenging, interpersonal and altruistic. Psychiatry, for which color blindness is not disabling, fit the bill.

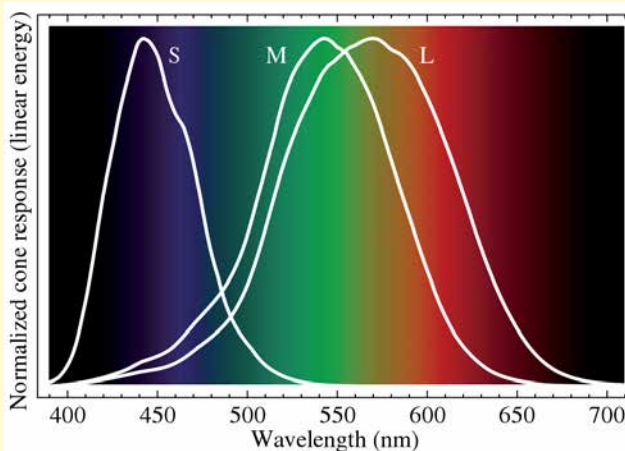
I once tried, while a medical student, to put my handicap to use. For our ophthalmology class, I wrote a research paper on color blindness. In the library of the Academy of Natural Sciences, where 35 years later I returned to become a research associate in orchids, I was fascinated by efforts to record the impulses from color receptors in the eye. H.K. Hartline, MD, at the University of Pennsylvania, dissected out single fibers in the squid. R.A. Granit, MD, at the Royal Caroline Institute, Scandinavia, used a microprobe to stimulate a single retinal cell. Both went on to win Nobel prizes, but my effort produced only a checkmark on the cover. Only after 65 years do I write again on color blindness.

Howard P. Wood (1923–2010), a psychiatrist for nearly 50 years in Haverford, Pennsylvania, was a research associate in the Department of Botany at the Academy of Natural Sciences, Philadelphia, Pennsylvania. He grew more than 300 species of Dendrobium and went into the wilds to see them in nature. Writing about and photographing orchids were among his passions, and he contributed to Orchids magazine. Anne Wood, 3300 Darby Road, Apartment 5208, Haverford, Pennsylvania 19041

Human Vision and Color Perception

HAVE you ever sat in on orchid judging, either as a judge or an observer, and noticed that people can have near violent disagreements over what color something is — whether that lovely cattleya is lavender, lilac or periwinkle blue? Have you ever noticed how an orchid bloom can be a ho-hum dull brown red in the hall, but take it outside and it becomes a wonderfully vibrant glowing maroon? People often think that color is an intrinsic property of an object like its mass or shape. But what we see and interpret as color is a very complex response of the object, the illumination and the observer. That illumination can be a factor is likely no surprise to anyone. Colors may appear similar under one type of light and different under another — as anyone who has ended up at the office with one navy, and one black sock can attest. What is less well understood perhaps is the variability in human color perception.

The Observer and Color Blindness Humans perceive color due to the presence of light sensitive cells in our retinas. We have two types of light sensitive cells, cones and rods. The cones enable us to see color, while the rod cells see black and white and are critical in night vision. The cone cells contain at least three classes of retinal pigments, each sensitive to a different but overlapping region of the visible spectrum: short wavelength (blue), middle wavelength (green) and long wavelength (red). That makes most of us "trichromats." For comparison, most birds have four types of color sensitive pigments and are "tetrachromats." For a given wavelength of light, multiple cone cells can be stimulated. That is, when we see a yellow object, say, 560 nm (nanometers) of light, both green and red cone cells are stimulated equally by this wavelength, the signal gets processed and the observer sees yellow-green. At about 480 nm, all three cone cells are stimulated and the result is blue-green (see graph).



Normalized responsiveness spectra of human cone cells. Background color is approximately that of the corresponding wavelength. Key: S = short wavelength (blue), M = medium wavelength (green) and L = long wavelength (red).

Differences in color perception arise when cells are absent, additional cells are present, or a cell's response curves are shifted. The most common forms of color perception difference are where the red or green cells' response curves are shifted to shorter or longer wavelengths (anomalous trichromacy), or are absent (dichromacy). About 2–3 percent of males are red-green color blind (dichromats) and up to one in 12 (8 percent) males are affected to some degree. Women are affected to a lesser extent (approximately 0.4 percent). There are also instances of blue cone cells being absent or shifted, the complete absence of cone cells (Sacks 1997) and the presence of additional magenta pigment in possibly 40 percent of women (Jameson et al. 2001).

The orchid images shown here were digitally processed using the Vischeck Photoshop plug-in to appear as they would to someone who completely lacks green cone response (deuteropia), red cone response (protanopia) and blue cone response (tritanopia). Because of the way the red and green pigment responses overlap, the result when one is completely absent is similar, and both deuteropes and protanopes are lumped into red-green color blindness. Tritanopia is extremely rare (<0.008 percent) and is included here for contrast. The fifth image is the grayscale component of the image. It is included to show just how much information is contained in the grayscale.



Five views of *Paphiopedilum victoria-regina* 'June Simpson', AM/AOS. The spectral bars on each photograph demonstrate the range of color experience available to that individual. Grower: Krull-Smith.

[1] Original photograph.

[2–4] Images processed using the Vischeck add-in for Photoshop. Simulations show how someone sees color with [2] deuteropia (lacking green cone response), [3] protanopia (lacking red cone response) or [4] tritanopia (lacking blue cone response, very rare). "Images 2 and 3 look similar, but there are slight differences. To my eyes, image 3 has slightly more intense yellows and blues," says the author.

[5] The image in grayscale.

For more information on color vision and color blindness, Wikipedia has outstanding entries that can be found here, http://en.wikipedia.org/wiki/Color_vision and here, http://en.wikipedia.org/wiki/Color_blindness, respectively.

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Luanne Rolly has a PhD in physical chemistry and works at the Hewlett-Packard Company in Inkjet Printing. She became interested in color perception while developing inks for Hewlett-Packard's consumer inkjet photo printers. In her spare time Rolly enjoys skating in women's flat track roller derby. Corvallis, Oregon (email luanne.rolly@gmail.com).

Size Counts



[1] Accredited AOS Judge Nina Rach (center) measures a masdevallia flower while judge Ken Roberts (left) looks on and judge Richard Fulford consults records at the 2002 Sociedad de Orquideología del Estado Miranda show in Caracas, Venezuela.

[2] Measurement is an essential part of the taxonomic verification process. Shown here is *Pleurothallis phalangulifera* photographed in situ in Ecuador.



IN ORCHIDS, “SIZE COUNTS” IS NOT always the same as “bigger is better.” American Orchid Society (AOS) judges are almost as fast on the draw with a ruler as a Wild West sheriff with a pistol. Why? Measurement gives us an extra tool with which to describe and compare orchid flowers. We write a formal description, including sizes in metric units in line with international taxonomy, that is paired with a photograph to be used as a permanent record of officially awarded orchid flowers, plants or exhibits. These are published in *AQ Plus*, which will eventually be replaced by *OrchidsPlus*, and provide an historical reference for past awards.

The *Handbook on Judging and Exhibition* published by the AOS tells us that we measure in part “to provide reference data for judges who are confronted with similar cultivars but who have not seen previously awarded flowers” (Section 7.5.2). In this case, assessing size is part of the evaluation process. Measurements are made in metric for precision. If you just look at the photographs of two clones of the same hybrid and read the description, you might think they are similar. While size is not everything, if one clone is 18 cm and the other is 13.5 cm, size can add to the overall wow factor. Knowing that the first clone was that much larger allows judges and growers not present when the plant was judged to appreciate better why the team awarded the orchid with a particular score.

Judges also take detailed measurements as part of a taxonomic description for identification of species. Two species may appear similar but one might be 2–3 cm while the other is 7–8 cm. Or the length of an appendage on a lip of two species may distinguish each by how long it is.

The handbook provides an ideal standard for quality for many genera. Frequently we see terms such as “full and round” in that context. For both species and hybrids, we may ask if the ratio of the width to the length of a segment, such as the petal, is greater between clones. The ratio can confirm a rounder segment. You may be thinking, “But you have an award photo.” Not always. With the advent of *OrchidsPlus*, we may be treated with up to four photographs of the same flower from different aspects when

GREG ALLIKAS

JOYCE MEDCALF

The Importance of Correctly Measuring Orchid Flowers

BY JEAN ALLEN-IKESON



JUAN CARLOS URIBE

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available and that is definitely a plus. But in the past, we had a single photograph that did not always illustrate the comparison in which we were interested. For judges, the award description and measurements are as valuable as a photograph for understanding why an orchid was awarded.

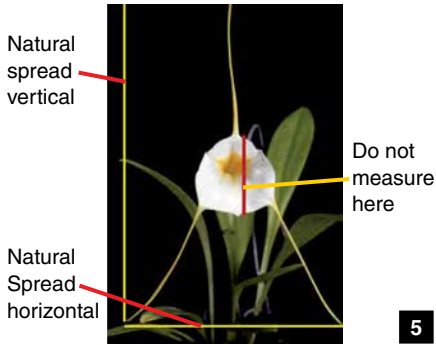
Phalaenopsis have relatively flat flowers on a single plane. However, cupped flowers in other genera may appear flat in a photograph. This is fairly common in the *Cattleya* alliance. Looking at the length of each petal multiplied by two should equal or closely so the horizontal natural spread, providing the petals are parallel with a line drawn for the flower width. If the natural spread horizontal is significantly less than the length of the sum of the petal lengths, then it suggests the flower is not flat. Look at the photograph of *Cattleya* Eva's Snow Way 'Angela Maria', AM/AOS (Over Flow



KEN JACOBSON

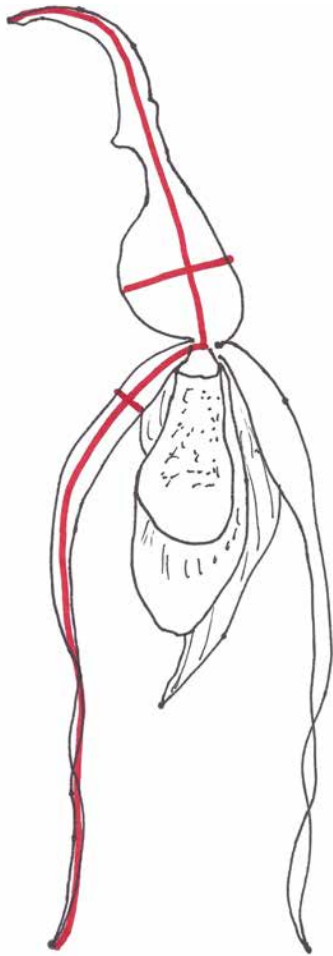
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- [3] Comparison of the natural spread horizontal with petal length may verify a flatter or more cupped flower when a **photograph may be misleading**. Here, the lovely center flower looks flat but it is not. The sum of the length of the petals is 25 percent more than the natural spread, which cannot occur if the flower is flat. The flowers on either side confirm the cupping. Example: *Cattleya* Eva's Snow Way 'Angela Maria', AM/AOS (Over Flow × Ecstasy). Grower: Beatriz Escobar.
- [4] Common sense should prevail when measuring orchids. The natural spread of the flower can be across the lip width rather than across the petals or sepals. Example: *Pecteilis radiata* 'Pope John Paul II', AM/AOS. Grower: Anna S. Chai.



5

JOHN LEWIS



6

JEAN ALLEN-HESSON



7

JAMES MCCULLOCH

- [5] Measure the **face** of the flower, **including the caudae or spurs** for natural spread.
 Example: *Masdevallia* White Swallow 'Memoria Otto Mittelstaedt, HCC/AOS (*constructa* × *data*). Grower: Wojciech Klikunas.
- [6] For petal and sepal width, measure perpendicular to the central vein, which is the same as the petal or sepal length in this drawing, following the contour. Example: *Phragmipedium*.
- [7] The AOS *Handbook on Judging and Exhibition* defines **lip length** as "the point of attachment to the base of the column foot to the **tip** (or to a point representing the **outermost margin** of the lip)" (Section 7.5.2). A. pouch width, B. pouch length and C. pouch depth, which is used by taxonomists and should be placed in the text of the description. Measuring pouches on the contour is not done by taxonomists. They measure straight across or along. Example: *Paphiopedilum adductum* 'Jo', AM/AOS. Grower: Stephen Helbling.

× Ecstasy). If you read the award description, you will find that the petals are 7.8 cm long but the flower has a natural spread of 12.5 cm. The natural spread is lessened by the cupping of this otherwise lovely flower, which can be confirmed by looking at the flowers on either side in the photograph. This is part of the reason we record petal length on the contour but natural spread as viewed looking at the face of a flower without flattening it. The two methods of measuring provide additional information, one for specifics and the other for general wow factor.

NATURAL SPREAD How we measure orchid flowers is the tricky part. For natural spread, which is the overall width

and height of a flower, the *Handbook on Judging and Exhibition* (Section 7.5.1) says: “Both the horizontal and the vertical dimensions of a flower are recorded. . . . measure of the **natural carriage** (width) of the flower in its maximum dimension **without flattening** or grooming. . . . This measurement may be from the **tips of the petals, sepals or caudae**, whichever is greater. . . . The vertical measurement . . . at its maximum dimension but in the vertical plane.”

This seems relatively straightforward but common sense should prevail. For *Pecteilis*¹ *radiata*, the natural spread would be across the lip. For very cupped or tubular flowers, the natural spread is taken across the **face** of the flower as in *Masdevallia* White Swallow ‘Memoria Otto Mittelstaedt, HCC/AOS (*constricta* × *datura*). Note that the measurement of natural spread for this orchid includes the caudae.

For the petals and sepals including synsepals, we measure along the contour of the segment as if it were flattened. The *Handbook on Judging and Exhibition* (Section 7.5.2) tells us that you measure their width as “the dimension when the sepal or petal is **flattened** into a plane.” We measure perpendicular to the central vein. For the length, we use “the dimension from the point of attachment to the tip **along the central vein**.”

This is straightforward enough. The difficult bit is figuring out what is a petal, sepal or lip on some genera with more confusing flowers. Many genera such as *Anguloa*, *Stanhopea* or tubular-type masdevallias can be a challenge for photographers and judges. The easiest way to identify parts is to look at the backside of the flower and work toward the face of the flower. The first segments attached are the sepals, then petals, the lip and then column.

Lips and pouches are subject to confusion and that can be seen in the inconsistency of measurement in some genera. For this context, the handbook does not mention pouches on slipper orchids or saclike lips in genera such as *Sarcochilus* or *Aerides*. For lip width, the handbook (Section 7.5.2) tells us to measure “the dimension when the lip is sufficiently **flattened not to damage** the flower.” For most *Cattleya* or *Oncidium*, flowers that is relatively simple. But when you have *Cattleya guttata* that has a spade-shaped lip with a large, flared end lobe and side lobes that wrap around the column, what do you do? Most people measure across the end lobe because that is what you see. Theoretically, we should measure around the contour of the side lobes if that is longer than



JIEA SHANG PHOTOGRAPHY

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[8] Measure the **inflorescence** from the **base** of the attachment of the peduncle following the midline of the stem to the **outermost tip** of the **farthest flower**. For arched or pendent inflorescences, follow the contour of the main stem to the tip of the farthest flower. Length of the inflorescence is important in breeding and for judging balance. **Add** inflorescence length **in the description**. Example: *Paphiopedilum* Lady Rothschild ‘Shih Yueh’, AM/AOS (*rothschildianum* × Lady Isabel). Grower: Shih Yueh Orchids.

the width of the end lobe. Most people do not do that. Perhaps the most sensible thing is to measure the visible end lobe and use that as the lip width and include the dimension around the contour of each side lobe in the body of the description as side lobe length. That way, it is obvious for other judges to see that you used the end lobe as the dominant feature for the width, but you have provided the extra information on the side lobes. Remember the entire point of measurement is to provide “reference” data by which other judges can “compare” previously awarded clones to one being judged.

For lip length, we are to measure the “point of attachment to the base of the column foot to the tip (or to a point representing the **outermost margin** of the lip)” (Section 7.5.2). Pouches on slipper orchids are not mentioned. So how do judges interpret width and length measurement in pouches? Most measure straight across for width. For

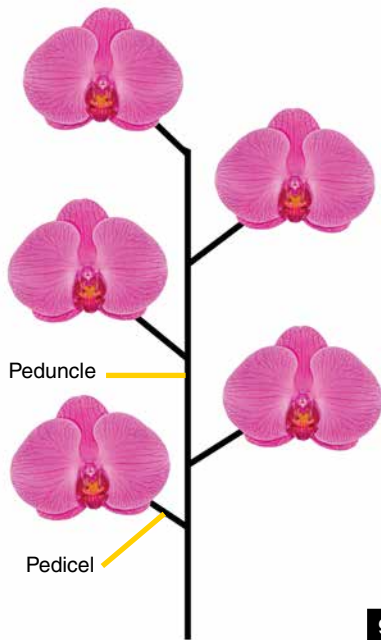
length, judges use two methods due to the lack of clarity in the handbook. Some follow the contour to the farthest point on the pouch from the attachment while others measure in a straight line from the attachment to the farthest point. This question was discussed at the AOS Members Meeting in Portland, Oregon, November 2012, at the Judges Forum where I presented this article as a PowerPoint presentation. Afterward, I discussed it with Ron McHatton, PhD, chief operating officer of the American Orchid Society, and suggested that perhaps we should consult a taxonomist with an expertise in slipper orchids and see how they measure. McHatton consulted Phillip Cribb, PhD, who is the author of the most influential taxonomy on *Paphiopedilum*. He said that taxonomists measure straight across the pouch at the widest point and in a straight line from its attachment to the farthest point from the attachment for the length. In addition, taxonomists measure the widest point in a straight line from the topside of the pouch to the backside of the pouch perpendicular to the length when viewing the pouch from the side. The photograph of *Paphiopedilum adductum* ‘Jo’, AM/AOS, makes this a bit clearer. The bottom line is that hopefully the Judging Committee and Handbook Task Force can introduce a modification of the *Handbook on Judging and Exhibition* for pouches to be in line with taxonomists and provide judges with direction for measurement, at least for the pouch. The “thickness” of the pouch could be included in the body of the award description. The important point is that all judges should be measuring pouches in the same manner so that measurements are comparable.

Some orchids have additional structures that should be measured. Angraecoids and *Neofinetia* have nectaries or spurs that should be measured as part of the natural spread. In addition, their length should be included separately in the body of the text. They should be measured along the contour. For measurements that are difficult to do with a ruler, some judges use a piece of thread along the contour and then transfer that length to a ruler. Waxed thread sometimes works well because it is a bit more rigid. In other instances, a flexible tape measure such as is used for sewing is useful.

INFLORESCENCE LENGTH The length of the inflorescence is an often neglected measurement. While not specifically required by the handbook, the rule of providing additional information for comparison should apply where possible. In the body of the award description, it might read “Twenty stately flowers and two buds on four inflorescences up to 23 cm in length.” Simple enough to write. This measurement also provides breeders and those who study

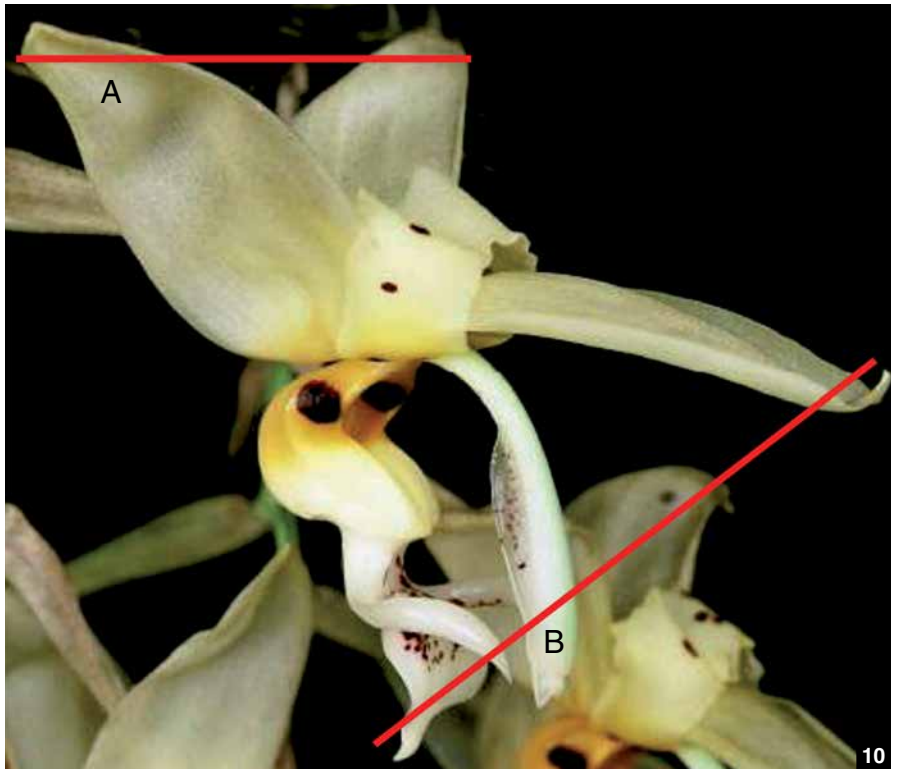
¹Formerly *Habenaria*

²Formerly *Masdevallia urosalpinx*.



9

MICHAEL MACCONAILL



10

TECK HIA

- [9] Parts of an inflorescence. **Peduncle:** Usually the **main stem** for a single flower, or from which single or multiple flowers branch. **Pedicel:** The secondary stem that connects the flower to the peduncle. Example: Flowers of *Phalaenopsis* Tai Lin Red Angel 'Lorraine Desjardins', AM/AOS (Tai Lin Angel × New Eagle). Grower: Le Paradis des Orchidées.
- [10] For *Stanhopea* and related genera: **A. Natural spread horizontal** is often measured across the lateral sepals. **B. Natural spread vertical** is measured from tip of epichile (usually the lowest vertical point) to farthest vertical point, when viewing the flower face. **The natural spread vertical is perpendicular to the natural spread horizontal.** Example: *Stanhopea embreei* 'Marcia Richter', AM/AOS. Grower: Robert J. Richter.

breeding to reward or work toward an ideal length that clears the leaves, is not crowded on a short inflorescence and is not so long that it makes the plant top heavy. The length relative to the foliage is frequently not shown in photographs, which makes this feature an important one to add to the description.

Measurement of the length of the inflorescence should include the entire inflorescence along its contour (as some are arching or pendent) from its attachment to the plant, including the peduncle or stem, to the farthest point on the farthest flower. Sometimes the inflorescence is confused with the peduncle or stem. Just remember that it is the entire floral-bearing structure including the flowers and stem. It does not end at the attachment of the last flower or pedicel.

The peduncle is the main stem for a single flower or from which single or multiple flowers branch. The pedicel is the secondary stem that connects the flower to the peduncle. These are simplified definitions, but should help in measuring most species and hybrids. Just remember that a single-flowered inflorescences may be sessile (not have a pedicel) or they may have a pedicel. *Spiranthes* (commonly known as ladies tresses) has multiple flowers along a spike but individual flowers are sessile. Look for peduncular bracts as demarcation between the peduncle and pedicel in species where the difference is confusing. If there is a pedicel, there may be a larger bract as in some bulbophyllums. It is important to measure these correctly for CBRs (Certificate of

The AOS Judging Handbook

THE full name is the *Handbook on Judging and Exhibition*. For judges, it is our bible of goals, rules and regulations for awarding orchids and displays. It provides a copy of the score cards we use while judging a plant for AOS judging. If you are interested in knowing how judges weigh points for the color of the lip against how large the flowers are or how many there are, you may find it worthwhile to have a look at it (Section 7.2). You will find that we award up to 10 points out of a possible 100 specifically for flower size when pointing for quality awards (HCC, AM or FCC). A Certificate of Horticultural Merit receives up to twelve points for size. Cultural awards and the Certificate of Botanical Recognition (CBR) do not receive any points specifically for flower size, although cultural awards do receive points for plant size (CCM and CCE).

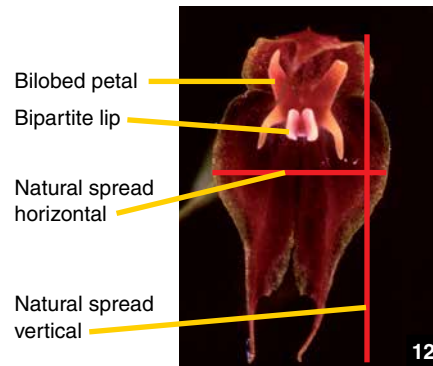
The handbook also contains directions for societies on how to stage an official AOS show with AOS judging. If you are considering applying to become an AOS student judge, it provides instructions on how to apply and the necessary qualifications, such as commitment and experience, that are likely to be considered in your application. There is also a glossary of terms.

You can access the handbook and learn about some of the mysteries of judging on *AQ Plus* (available by subscription from the AOS), the program that judges carry to shows and that contains award descriptions for all awards and photos for most. The handbook is also available online under the Judging tab on www.aos.org. You do not need to be a member of the AOS or a subscriber to *AQ Plus* to read the handbook on the website.

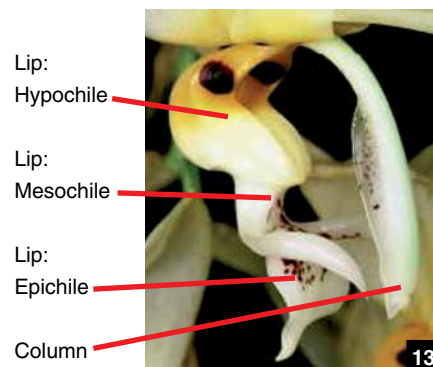
— Jean Allen-Ikeson.



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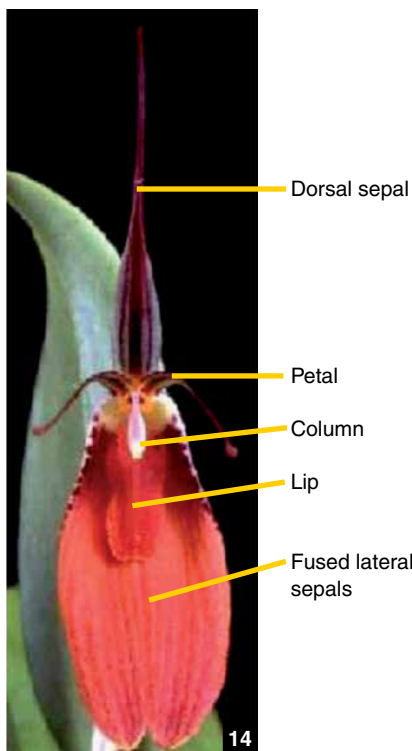
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Botanical Recognition), CHMs (Certificate of Horticultural Merit) and the Species Identification Task Force (SITF) form.

VEGETATIVE PARTS In some cases, judges measure the vegetative parts of the plant in addition to the flowers. What to measure is clear on the SITF form. When to measure for award descriptions can be confusing for student judges. The easiest way to remember when to measure vegetation, pot size, etc., is to do it for all awards that begin with the letter C: CBR, CHM, CCM (Certificate of Cultural Merit) and CCE (Certificate of Cultural Excellence).

Some species and genera make judges want to pretend to look on the floor for a dropped pencil when the call goes out to apply the ruler. The handbook says (Section 7.5): "Special attention should be given to the descriptions and measurements of orchid species, which by their nature are often small and difficult to describe clearly."

There are a couple of tricks that help with small or confusing species. First, always remember to view the flower at its "face." Look at *Stanhopea* in the face. The natural spread horizontal generally measures from tip to tip of the lateral sepals. Natural spread vertical is usually from the tip of the epichile (distal portion of lip), which would be the lowest point on a vertical plane, to the highest vertical point that is usually the tip of the dorsal sepal. Remember that the natural spread horizontal should be measured as perpendicular to the natural spread vertical.



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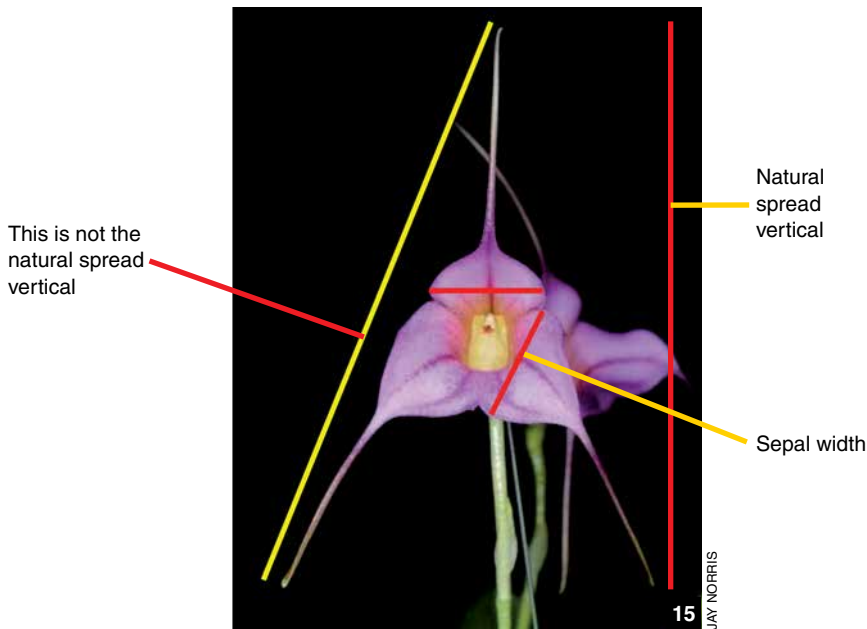
For masdevallias with tubular flowers or genera with mostly or completely closed flowers such as *Anguloa* or *Zootrophion*, measure the face of the flower for natural spread, **not** the length of the sepals. Such flowers are frequently measured incorrectly. Mario and Conni Ferrusi, Fenwick, Ontario, have received awards on a number of *Zootrophion* at the Toronto Judging

[11] Natural spread of this orchid was measured **incorrectly** along the length of the sepals rather than from the face of the flower. (It was recorded as having a natural spread horizontal of 2.2 cm and a natural spread vertical of 4.3 cm with the sepal length also as 4.3 cm.) The sepal length, rather than the face of the flower, was apparently measured. Example: *Zootrophion dayanum* 'Peek a Boo', CCM/AOS. Grower: Mario and Conni Ferrusi.

[12] Confused on these flowers parts? Distinguishing them can be a problem. A hint from AOS Accredited Judge Bergen Todd, Salem, Oregon: Look at the **back** of the flower where the segments attach; **sepals come first, then petals, then lip (pouch), then column**. Example: *Lepanthes guatemalensis* 'Nino Perdido', CHM/AOS. Grower: Sunset Orchids.

[13] The lip in *Stanhopea* and related genera includes the hypochile, mesochile and epichile. Example: detail from *Stanhopea embreei* 'Marcia Richter', AM/AOS. Grower: Robert J. Richter. Photograph by Teck Hia.

[14] **Fused** lateral sepals, shown here, are also common in *Bulbophyllum*. Measure **half** of the total width of fused lateral sepals for the sepal width. Example: *Restrepia cuprea* 'Eichenfels', CHM/AOS. Grower: Ann Lauer Jesup.



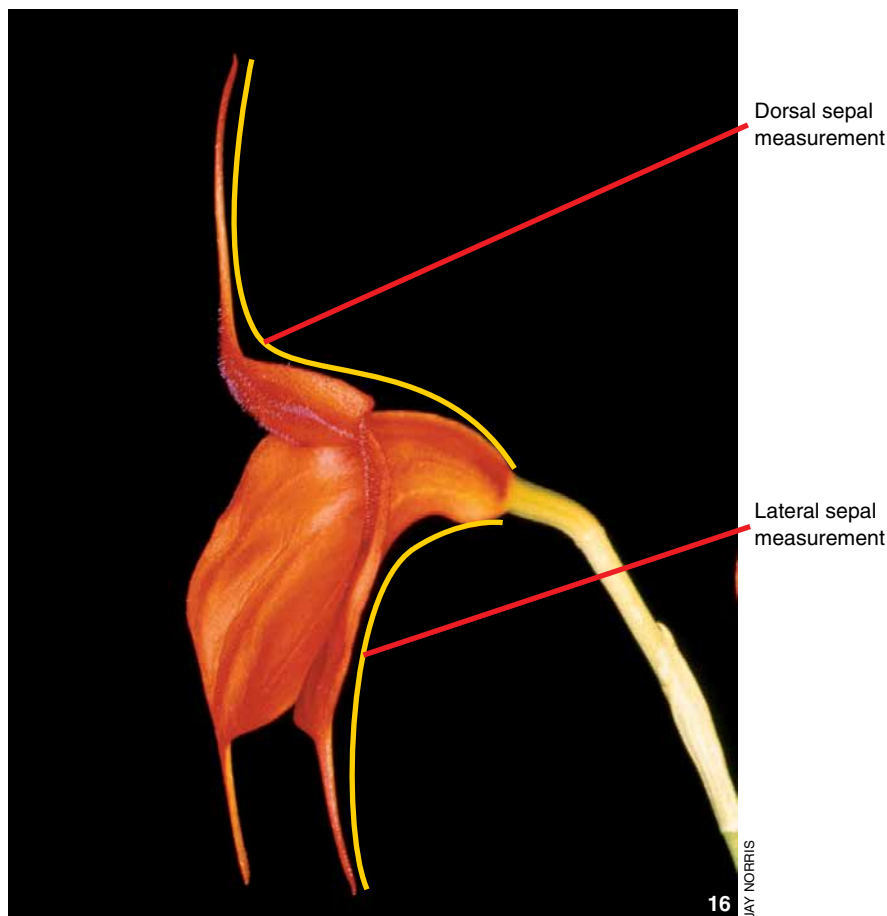
Center. The *Zootrophion alvaroi* 'Yellow Birdz', CCE/AOS, clone was measured correctly with a natural spread of 0.5×1.0 cm and lateral sepal length of 2.8 cm. The face of the flower was measured. Contrast that to another of their plants, *Zootrophion dayanum* 'Peek a Boo', CCM/AOS, with a natural spread of $2.2 \text{ cm} \times 4.3 \text{ cm}$. The lateral sepals were also 4.3 cm, which could only be possible if the natural spread vertical has been measured along the length of the sepals rather than across the face of the flower. The photograph shows the side of the flower, not the face from which measurement should be taken.

FLORAL SEGMENTS Identification of floral segments can be confusing. We think of widely grown genera such as *Cattleya* or *Phalaenopsis* for which the petals are usually larger than the lateral sepals as easy to identify the floral parts. The confusion comes in when this simple relationship no longer exists or if something like the petals are bilobed and the lip has two parts as in *Lepanthes guatemalensis*. The lip and column of *Stanhopea* may make student judges run for the door. The trick to solve this dilemma has already been mentioned: identify the floral segments by working from the back of the flower where it attaches and work toward the front. The column is attached lastly after the lip.

Some genera have fused sepals (many *Bulbophyllum*, *Masdevallia* and other members of the Pleurothallid alliance). You should take **half** of the total width of the fused lateral sepals for the lateral sepal width measurement. *Masdevallias* that have a dorsal and lateral sepals fused are a problem. The width of the dorsal sepal and each of the lateral sepals should be measured as shown in the photograph of *Masdevallia* Violet Gems 'Starry', AM/AOS (*uniflora* \times Wally Bernstein), as the distance at the widest points between the seams of the fused sepals. The length should be measured along the contour from the sepaline attachment to the tip of the caudae. You need to take one measurement for the dorsal sepal and a second for the lateral sepals.

Nonresupinate orchid flowers are those in which the flower is held upside down from our normal image of an orchid flower. The dorsal sepal points downward and the lip and lateral sepals reach upward. When such a nonresupinate flower has fused lateral sepals, the dorsal and the lateral sepal can cause consternation. Close observation is the key here to avoid confusion.

Species Identification Task Force forms with their detailed questions on form and colour are a requirement for species not previously awarded that have been provi-



[15] In *masdevallias*, measure the sepal width at the widest point. The natural spread vertical is measured across the face of the flower perpendicular to the natural spread horizontal. Example: *Masdevallia* Northern Envy 'Orange Nugget', AM/AOS (Southern Sun \times *welischii*). Grower: Mario and Conni Ferrusi.

[16] For the flowers of *masdevallias*, especially tubular ones, measure the sepal **length** from the back side along the contour to **include the caudae**. Example: *Masdevallia* Violet Gems 'Starry', AM/AOS (*uniflora* \times Wally Bernstein). Grower: Mario and Conni Ferrusi.

sionally awarded subject to identification. In order to do their job of classification, SITF members need **clear, close-up photographs**, especially of the lip. Sometimes measuring small or oddly formed flowers is difficult or nearly impossible. AOS Accredited Judge Jay Norris, Stratford, Ontario, has suggested that, where possible and with permission of the owner, judging team members should dissect a flower, let it wilt and stick the parts to a card with scotch tape and then make the measurements for the SITF form. A photograph with a ruler beside the dissected floral parts may be useful. SITF members need close-up views of floral parts to make taxonomic distinctions between species.

The final word on measurement is that, as with all judging, it is a team effort. There are three people responsible for accurate measurement of orchid flowers for awards. The first is the judge or student who is doing the actual measurement and recording it. The second is the judging team captain who reviews the award description. It is essential that the team captain look at the measurements and make sure they make sense, that the face of the flower was measured and the horizontal and vertical measurements are not reversed. The third person who reviews an award description and the measurements is the chair of the judging center if at a monthly judging or the head judge for AOS judging at a show. The handbook (Section 7.5) mandates that: "A uniform standard for measuring . . . awarded plants and flowers is essential in providing useful records with which to compare subsequent cultivars of the same species or breeding. . . . The responsibility for proper measurements rests with the **judging team captain**. . . . The recorded measurements . . . should be **reviewed by the chair of judging**."

I started this article with the title "Size Counts" and went on to point out why it does and how it is measured. Too often judges are accused of being overly concerned with larger and larger flowers for a species or cross. As you can see, size is a complex issue and essential to award descriptions and future comparison.

Jean Allen-Ikeson is an accredited American Orchid Society judge and a member of the Training Task Force (TTF) for judging. The TTF members are developing training aids for AOS Judging Centers. Besides writing articles for Orchids, she operates Windsor Greenhouse in Dundas, Ontario, Canada where she grows and sells orchids and sells greenhouses to orchid growers. She is the author of the Orchids supplemental issue on Sarcophilus in 2011 (email jean.ikeson@gmail.com).



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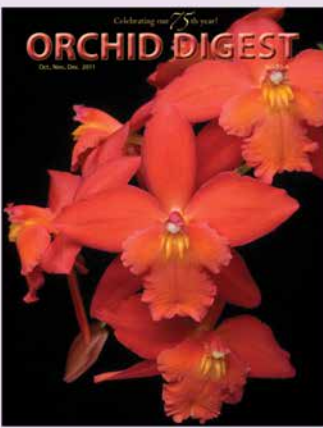


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APRIL

- 5-7 — **Northeast Louisiana Orchid Society Show "Showers of Orchids,"** Pecanland Mall, 4700 Milhaven Rd., Monroe, LA; Contact: Jack Battaglia, 318-801-3828; battj@bellsouth.net
- 6-7 — **33rd Tropical Plant Society of Modesto Show and Sale,** Agnes M. Baptist Elementary School, 1825 Cheyenne Way, Modesto, CA; Contact: Susan Wedegaertner, 209-545-4732; sgwede@gmail.com
- 6-7 — **California Central Coast Orchid Show and Sale,** South County Regional Center, 800 W Branch St., Arroyo Grande, CA; Contact: Eric Holanda, 805-929-5749; cbh@charter.net
- 6-7 — **Central Florida Orchid Society Spring Show and Sale,** Maitland Civic Center, 641 S Maitland Ave., Maitland, FL; Contact: Joselito Tolentino Jr., 407-884-2950; macykulit@aol.com
- 6-7 — **Central Ohio Orchid Society Show,** Franklin Park Conservatory, 1777 E Broad St., Columbus, OH; Contact: Dave Markley, 614-471-5437; dmarkley5868@wowway.com
- 6-7 — **Cherry City Orchid Society Show,** Lancaster Mall, 831 Lancaster Dr. NE, Salem, OR; Contact: Sherren Wargnier, 503-428-8982; sherrenwarg@gervais.com
- 6-7 — **Desert Valley Orchid Society Show and Sale,** Baker Nursery, 3414 N 40th St., Phoenix, AZ; Contact: Demitris Sagias, 602-619-3147; dsagias@apd.maricopa.gov
- 6-7 — **Genesee Region Orchid Society Show and Sale,** Rochester Museum and Science Center, 657 E Ave., Rochester, NY; Contact: Carol Butcher, 585-742-3403; butcher218@yahoo.com
- 6-7 — **Illinois Orchid Society Show,** Chicago Botanic Garden, Lake Cook Rd., Glencoe, IL; Contact: Rose Matchen, 847-587-6525; goldrosej@att.net
- 6-7 — **Les Orchidophiles de Quebec "Orchidofolie 2013,"** Pavillon Environtron, 2480 boul. Hochelaga, Quebec, Quebec, Canada; Contact: Patricia Caris, 418-527-0738; roger_paquet@videotron.ca
- 6-7 — **Northwest Orchid Society Show,** Sky Nursery, 18528 Aurora Ave. N, Shoreline, WA; Contact: Michael Foster, 206-365-6406; fosterpierce@comcast.net
- 6-7 — **Utah Orchid Society Show,** Red Butte Gardens, 303 Wakara Way, Salt Lake City, UT; Contact: Lyn Pedone, 801-583-9186; charliegirl78@comcast.net
- 12-13 — **Englewood Area Orchid Society Show "Orchids by Lemon Bay,"** Englewood United Methodist Church, 700 Dearborn St., Englewood, FL; Contact: Ann Baldwin, 941-475-5097; annmbaldwin501@frontier.com
- 12-14 — **Central Vancouver Island Orchid Society Annual Show,** Nanaimo North Town Centre, 201 4750 Rutherford Rd., Nanaimo, BC, Canada; Contact: Angela Beltane, 250-748-8004; widdershins101@gmail.com
- 12-14 — **San Joaquin Orchid Society "Orchid Fest,"** Sherwood Mall, 5308 Pacific Ave., Stockton, CA; Contact: Joan Hinds, 209-477-9358; joanhinds@att.net
- 12-14 — **Southeastern Pennsylvania Orchid Society International Orchid Show and Sale,** Academy of Natural Sciences of Drexel University, 1900 Benjamin Franklin Pkwy., Philadelphia, PA; Contact: Bob Sprague, 484-919-2922; bobsatcyndal@aol.com
- 13-14 — **Central Indiana Orchid Society Spring Show,** Garfield Park Conservatory, 2505 Conservatory Dr., Indianapolis, IN; Contact:

Michael Hinshaw, 765-318-5968; mehinhshaw@hotmail.com

- 13-14 — **Toronto Artistic Orchid Association Annual Show,** Center for Information and Community Services, 2330 Midland Ave., Toronto, Ontario, Canada; Contact: John Li, 905-607-3559; johnlkli@yahoo.com
- 19-21 — **Deep South Orchid Society Show "Rhapsody of Orchids,"** Savannah Mall, 14045 Abercorn St., Savannah, GA; Contact: Stanley Konter, 912-355-7200; stan@sabre-tech.com
- 19-21 — **Sacajawea Orchid Society Show,** Gallatin Valley Mall, 2825 W Main St., Unit 3-J, Bozeman, MT; Contact: Charlie Spinelli, 406-282-7621; companion@jmt.net
- 19-21 — **Sandhills Orchid Society Spring Show,** Cape Fear Botanic Gardens, 536 N Eastern Blvd., Fayetteville, NC; Contact: Joy Lemieux, 919-935-9427; joylemieux@windstream.net
- 20 — **Gold Coast Cymbidium Growers Annual Show,** Woodside Rd. United Methodist Church, 2000 Woodside Rd., Redwood City, CA; Contact: Pierre Pujol, 650-255-9102; pierrepujol@yahoo.com
- 20-21 — **47th Annual Tallahassee Orchid Society Show and Sale,** Doyle Conner Agriculture Bldg., 3125 Doyle Conner Blvd., Tallahassee, FL; Contact: Pam Stevens, 850-510-5528; pamstevens08comcast.net
- 20-21 — **Ann Arbor Orchid Festival and Mid-America Orchid Congress,** Methaei Botanical Gardens, 1800 N Dixboro Rd., Ann Arbor, MI; Contact: Alex Challis, 734-971-6186; alex@newworldorchids.com
- 20-21 — **Houston Orchid Society Show and Sale,** Houston Museum of Natural Science, 5555 Hermann Park Dr., Houston, TX; Contact: Holly Miller, 281-597-8792; hollymil@earthlink.net
- 20-21 — **Oregon Orchid Show,** Ambridge Event Center, 1333 NE Martin Luther King Jr Blvd., Portland, OR; Contact: Michael Jenne, 971-219-5291; oregonorchidsociety@gmail.com
- 20-21 — **Ottawa Orchid Society Show "Orchidophilia,"** Nepean Sportsplex, 1701 Woodroffe Ave., Ottawa, Ontario, Canada; Contact: David Cooper, 613-673-1807; chipwendover@videotron.ca
- 20-21 — **Sacramento Orchid Society Show "In the Mood for Orchids,"** Scottish Rite Temple, 6151 H St., Sacramento, CA; Contact: Penny Walgenbach, 530-476-2751; pjwalgenbach@frontiernet.net
- 20-21 — **Southern Tier Orchid Society Show,** Oakdale Mall, 601-635 Harry L. Drive, Johnson City, NY; Contact: Anne Tinker, 607-797-1383; annetinker@yahoo.com
- 20-21 — **Tulsa Orchid Society Spring Show and Sale "An Orchid Odyssey,"** Tulsa Garden Center, 2435 S Peoria Ave., Tulsa, OK; Contact: Darrin Mullins, 918-698-3930; darrin.mullins@att.net
- 26-28 — **Exposicion Nacional de Orquideas Cartago 2013,** Gimnasio del Instituto Tecnologico de Costa Rica, 800 metros este Estadio Fello Meza, Cartago, Costa Rica; Contact: Carlos Granados, 506-8379-1513; cagranados@hotmail.com
- 27-28 — **Heart O' Texas Orchid Society Show "Orchid Fever,"** Zilker Botanical Gardens Center, 2220 Barton Springs Rd., Austin, TX; Contact: Maria "Myr" Hernandez, 512-385-3887; myrhernandez@gmail.com
- 27-28 — **The 31st Vero Beach Orchid Society Show and Sale,** Riverside Park, 3001 Riverside Park Dr., Vero Beach, FL; Contact: Douglas Mew, 772-778-6625; instedof@bellsouth.net

MAY

- 2-5 — **Sociedad de Orquidistas del Este Show,** Fito Ramos Gimnasio, Route 976 - Bo. Florencio, Fajardo, PR; Contact: Edwin A Perez, 787-556-0654; j_e_orchids@hotmail.com
- 3-5 — **New Mexico Orchid Guild "Orchid Seduction,"** ABQ BioPark Botanic Garden, 2601 Central Ave. NW, Albuquerque, NM; Contact: Keith Mead, 505-898-0975; orchidsinabq@gmail.com
- 3-5 — **Platinum Coast Orchid Society Show,** Kiwanis Island Park, 951 Kiwanis Island Park Rd., Merritt Island, FL; Contact: Dennis Gollehon, 321-427-6959; dennisgollehon@gmail.com
- 4-5 — **Central Pennsylvania Orchid Society Show,** The Ag Arena, Park Ave., University Park, PA; Contact: Cathy Riemer, 814-865-4748; cathy+cpo13show@bx.psu.edu
- 4-5 — **South Central Washington Orchid Society 2013 Orchid Show and Sale,** Tri-Tech Skills Center, 5929 W Metaline, Kennewick, WA; Contact: Randall Scheele, 509-628-8184; randys001@charter.net
- 10-11 — **Kauai Orchid Society Mothers' Day Show,** Kukui Grove Shopping Center, 3-2600 Kaunualii Hwy., Lihue, HI; Contact: Gary Henderson, 808-346-1398; gary@aloha.net
- 10-12 — **Oklahoma Orchid Society Mother's Day Show and Sale,** Will Rogers Garden Exhibition Center, 3400 NW 36th St., Oklahoma City, OK; Contact: Jana Butcher, 405-209-7657; w.butcher@cox.net
- 11-12 — **Orchid Society of Northwestern Pennsylvania Show,** JMC Arena, 423 W 38th St., Erie, PA; Contact: Susanne Lester, 814-838-2522; lesters@velocity.net
- 11-12 — **Volusia County Orchid Society "Garden of Orchids,"** Volusia County Fairgrounds, Hester Bldg., 3150 East New York Ave., DeLand, FL; Contact: Joanne Stygles, 386-679-9853; vcosorchidshow@cfl.rr.com
- 17-19 — **Memphis Orchid Society Show "Orchids Around the World,"** Memphis Botanic Garden, 750 Cherry Rd., Memphis, TN; Contact: Charles and Susan Wilson, 901-268-1445; memphisorchids@gmail.com
- 17-19 — **Redland International Orchid Festival "America's Favorite Orchid Festival,"** Fruit and Spice Park, 24801 SW 187th Ave., Homestead, FL; Contact: Bill Peters, whimsy@bellsouth.net; Robert Randall, caribplants@att.net; www.redlandorchidfestival.org
- 25-26 — **Northwestern Michigan Orchid Society Show,** Grand Traverse County Civic Center, 1213 W Civic Center Dr., Traverse City, MI; Contact: Peg Brace, 231-883-7994; pbrace@chartermi.net
- 31-June 2 — **San Jose Orchid Exposition 8,** Winchester Mystery House, 525 S Winchester Blvd., San Jose, CA; www.realorchidgrowers.com; 408-247-2101; Contact: Bruce Davidson; bwdavidson2@me.com

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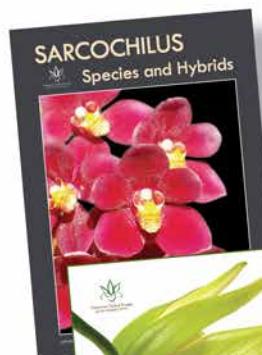
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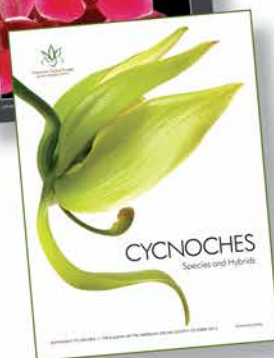
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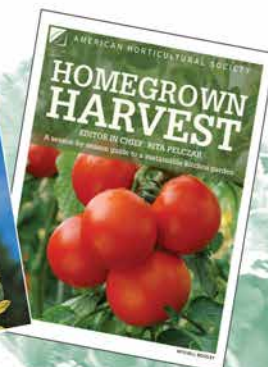
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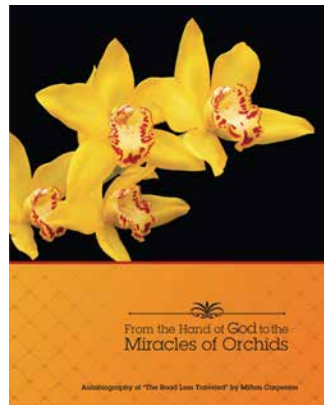
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Go to www.aos.org to read a review of Milton Carpenter's new book *From the Hand of God to the Miracles of Orchids*.

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Getting Outside Yourself



Repurposed orchid photographs from *Orchids* magazine illustrate the tie-in between art and music on the album cover for *Outside Myself* (available at www.mariabrosgol.bandcamp.com).

ON a whim in the spring of 2010, I bought 20 back issues of *Orchids* at a library book sale. I'd never heard of the magazine before, and (don't hate me) I had zero interest in learning about orchids, but the photographs were too stunning to ignore. Plus I had a gut feeling they'd come in handy someday.



Vincent Vinci

Arcimboldo and loosely based on a photograph of Belle Skinner (1866–1928), an American businesswoman, humanitarian and music lover. The Skinner Hall of Music at Vassar College, Poughkeeps-

Three years of incubation later, my friend and then-flatmate Maria Brosgol, the preternaturally talented singer-songwriter-guitarist-ukuleleist-(you-name-it-she-does-it-ist), asked me to design the cover of her first digital album and CD, *Outside Myself*. So, incubation over, I dug the magazines out of my closet and got to work.

Ehem. The collage is inspired by the fantastical 16th century portraiture of Giuseppe

Caracciolo, New York, was donated in her memory by her brother William in 1932, and it's where Brosgol recorded all but one of the songs on her album. The bonus track, "The Narrow Line," was recorded in balmy old Russia; see if you can hear the desperation — I mean difference (www.mariabrosgol.bandcamp.com).

During her last year at Vassar, Brosgol was at Skinner eight hours a day, every day, working with other musicians (students and professors) who donated their time to help her realize her vision. That's why Brosgol initially thought she'd name the album *Belle Skinner*, and why I chose Belle Skinner as the subject for the cover. It wasn't until shortly before the album's release that she decided to name the album after the track *Outside Myself* (which you can hear, along with the rest of the album, I don't know, online somewhere, probably; who can say?).

And despite myself I ended up learning something about orchids: *Dracula vampira*. — Vincent Vinci (pray for him, he asks) is an unemployable college dropout and aspiring writer. Nutley, New Jersey (email vincent.a.vinci@gmail.com).

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Cattleya maxima in Ecuador

It is distributed in southern and northwestern Ecuador and grows from sea level to 1,200 meters.

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