

Improving Color Identification of Awarded Orchids

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When an orchid receives an American Orchid Society (AOS) award, it is the responsibility of the awarding team of judges to write a concise description of the inflorescence. The written description generally includes flower number and presentation, a detailed description of color(s), as well as the substance and texture of the flower. For example, the description of *Brassolaeliocattleya* Streeter's Sunrise 'Myriah's Sunset', HCC/AOS reads:

"Four flowers on one inflorescence; sepals and petals butterscotch orange overlaid with smoky lavender; lip deep yellow edged with smoky lavender, center lobe apex marked with oxblood red; substance good; texture sparkling..."

This is followed by precise measurement of specific areas of the flower, yielding overall size and relative proportion of the parts, e.g.:

"...Nat. spr. 9.8 cm, 10.0 cm vert; ds 2.2 cm w, 6.4 cm l, pet 3.7 cm w, 5.7 cm l; ls 2.2 cm w, 5.6 cm l; lip 3.5 cm w, 4.7 cm l."

The entire description (sometimes accompanied by a black-and-white or color photograph) is then published in *Awards Quarterly* and used as a benchmark reference by other AOS judging teams evaluating comparable phenotypes. Ideally, a well-written description leads the reader to clearly visualize that specific plant and all of its floral attributes. For this reason, the plant must be described in the most tangible terms possible, and in terms that are unequivocal and uniformly recognized by AOS judges in any location, and at any time.

Linear measurements meet this objective; a centimeter is a standard recognized everywhere. By comparison, the description of a flower's color is profoundly different: it is traditionally described in popular terms ("butterscotch orange," "oxblood red," "lavender"), which can be subjective and relatively vague. As is well known, people perceive color differently. We often prefer different words to identify the same color (what you call "lavender" is my "lilac," what you call "lilac" I call "periwinkle," etc.). In practice, popular terms are generally too broad to permit precise recovery of the color when another judge, orchid enthusiast, wholesaler, or retailer refers to the description in *Awards Quarterly*. Moreover, lighting conditions can vary dramatically at judging sites; fluorescent lights are notorious for fading reds and purples, halogen lights affect greens, and neither approaches daylight in showing colors.

The 35-mm color slides taken by an AOS photographer at the time of the award can only partially resolve these problems. Photographs taken at different judging sites around the country and viewed at monthly judging slide-show sessions do themselves show a wide range in color saturation, hue, and even focus. Inevitably, there have been, and will be, variations due to ambient lighting conditions, length of exposure, background used, type

and age of film, and even the photographer. Other concerns are that color slides age slightly as time progresses, and that making copies, or printing the original slide (such as in *Awards Quarterly*) introduces additional errors in the color, unavoidably giving the viewer an inaccurate impression of the true color of the awarded flower.

UNIVERSAL COLOR IDENTIFICATION SYSTEM We propose to describe and record flower colors using a universal color identification system comparable to the metric system used for linear measurement. Using this standard, we could accurately and easily represent colors in terms that are understandable worldwide, as well as reproducible over time.

The ideal color standard for our purposes should do the following: be recognized and accepted worldwide; be easy to use with minimal training; uniquely identify each color; cover the complete color spectrum; be uniform in quality, consistent and long-lasting; be readily available from a reputable, long-established company; and be low in cost.

Color standard systems generally take the form of color charts printed on pages of cardboard or plastic, or of color fans (a stack of sturdy paper strips printed with gradations of colors, held together by a pin at one end, which can be displayed in a fanlike arrangement). In our opinion, flat color charts are inconvenient to use due to their size and cumbersome access to a color in the middle of a page (try one out to see what we mean). By comparison, color fans are easy to handle; the edge of the narrow color strip can easily be placed next to the flower to be checked, and a precise color match made.

PANTONE® COLOR MATCHING SYSTEM While a number of color identification systems exist, the PANTONE® Matching System is, in our opinion, the best choice for our needs. PANTONE® Corporation (www.PANTONE.com) is universally recognized as the world leader in color-related products and services. In business for decades, their customers include most printers, graphic designers, decorators, and publishers. When printers or clients want to ensure the exact color in a poster, catalog, lithograph, etc., they most often use PANTONE® color fans as their reference. Many Apple computers now have software installed that includes the PANTONE® color system for adjusting colors in the color printer.

The most popular format for this Matching System is the 116-page hand-held fan, consisting of 1,114 colors arranged by hue and printed on 1.5x8-inch card stock. Half of the fan is printed on coated (shiny) paper, the other half on uncoated (matte) paper. Each color has a unique PANTONE® identification number (a “PANTONE® Matching System number” or “PMS number”) that a printer or client anywhere in the world will recognize and be able to duplicate exactly. The other format for the PANTONE® system is a 5x7-inch, three-ring binder, providing four detachable color chips for each hue.

The PANTONE® Color Formula Guide fan provides:

1. International recognition as the leader in color matching
2. Ease of use
3. A unique, universal identification number of each hue of any color

4. Full-spectrum coverage, with 1,114 colors in both shiny and matte finishes
5. No changes in the identification number used for a color
6. Availability from any paper supplier or printer in the United States, or from the PANTONE® web site
7. A reasonable cost of \$79.00

PANTONE® COLOR FAN The PANTONE® Corporation recommends that color fans be replaced annually. However, this is based on extensive daily use, as in the handling and exposure to light the color fans receive in commercial establishments such as printing businesses, paint shops, etc. When color fans are used just for judging, they will be handled, on average, only a few hours each month. Thus, their lifetime for judging use may well be three years or more, although the actual lifetime can be determined only with experience. For many years, the Orchid Society of Germany (DOG) has used the Bielsalsky color identification system, which is quite similar to the PANTONE® Color Matching System. Today DOG is still using color charts purchased a long time ago, indicating that the lifetime of such color systems can be considerably longer than three years.

Judges using the PANTONE® Matching System would benefit from a small amount of introductory training, as well as some experience with the system to handle it quickly and efficiently. After acquiring some familiarity, determining the PMS number of a color accurately would take very little time.

The reproducibility of the PANTONE® Matching System identification numbers should be checked by the judging centers under different lighting conditions. For this purpose, several plants with different flower color could have their color identification number determined under various lighting conditions (clear daylight, cloudy daylight; fluorescent, incandescent, and halogen light). If resulting deviations for each color are considered insignificant, then the identification number readings are regarded to be independent of the light conditions. If the resulting deviations for each color are considered significant, then the AOS should consider adopting a mandatory uniform lighting system (e.g. the use of two lamps with 5,000 Kelvin [K] bulbs at a specified distance from the flower that's color identification number is to be checked). Such 5,000 K bulbs reproduce daylight conditions, and they are long lasting, portable and lightweight (and so easy to take to shows and judging sessions).

PANTONE® Matching System colors could be grouped into sections with popular names, for ease of use. For instance, PMS #600-603 could be called "light yellow" and PMS #164-167 could be "burnt orange." Since the PMS number of a particular color is quickly determined, this would eliminate the sometimes lengthy discussion among a judging team as to whether the color is best described as "lemon yellow," "medium yellow," and "canary yellow." In practice, each award description would include both the selected color term and a unique identification number.

COST OF PANTONE® MATCHING SYSTEM FANS Purchased individually, each

PANTONE® color fan costs approximately \$80. Since each judging team consists of at least three people, and each team needs only one color fan, the cost for purchasing the color fans individually amounts to approximately \$27 per judge if the color fans are purchased annually. If the color fans are replaced only every third year (a reasonable assumption) then the price per year, per judge drops to \$9.

There are about 30 AOS judging centers in the United States. Each judging center would require between five and eight color fans, so a total of 150 to 300 color fans would be needed. If the AOS purchases this quantity from the PANTONE® Corporation, the cost per fan should drop considerably – we estimate to about \$60. Thus the price (computed for a three-year renewal period) would drop to approximately \$7 per year, per judge.

COLOR IDENTIFICATION SYSTEM AND AWARDS QUARTERLY REPORTS

With the use of the PMS color fan, the description of an awarded plant would look like the following (see *Awards Quarterly*, Vol. 31, No. 3, page 239, for original):

Wilsonara Lisa Devos ‘Patience’, HCC/AOS (79 points)

(*Oda*. Cherry Glow x *Odcdm*. Crowborough)

February 19, 2000

Color photograph page 214

Twenty-three flat, symmetrical flowers and 10 buds very well spaced on two inflorescences; sepals and petals dark rose (213), heavily overlaid burgundy (208) with intense red (032) highlights centrally, leaving a dark rose (213) picotee on all segments; lip very pale rose (203) overlaid on basal half with burnt orange (166); crest canary yellow (108); column white with purple (261) spots; substance heavy; texture crystalline. Measurements: Nat. spr. 6.8 cm, 7.3 cm vert.; ds 2.2 cm w, 3.9 cm l; pet 2.7 cm w, 3.5 cm l; ls 2.1 cm w, 3.8 cm l; lip 2.2 cm w, 2.9 cm l.

Miami Valley Orchid Society Show, Dayton, Ohio. Exhibitor: Larry Sanford, Cincinnati, Ohio. (20000244) Photography by James McCulloch. F1800

In the above example, the additional entries for color identification amount to half a line out of 10 lines of text. Assuming that the same ratio applies to the description of all awarded plants, the number of text pages of *Awards Quarterly* would increase by roughly five percent.

CONCLUSION Outstanding color and large size are often the first aspects of an orchid flower to catch our eye. Both play a significant role in nominating a plant for judging and scoring. Flower size (listed under “Other Characteristics” on the AOS score sheet), is accorded a maximum of ten out of a possible 100 points. Since large flower size is almost always considered an improvement, accurate, reproducible measurement is essential. Measuring and comparing flower size relative to previous awards is a clear-cut process using the metric system and the AOS rules for measuring flowers.

Color of flower, by contrast, accounts for 30-40 percent of the total score on the AOS judges' score sheet, depending on the genus. Despite the three- to four-fold greater value of color over size in point-scoring a flower, judges do not have access to clear-cut descriptions or color identifications for previously awarded plants. They must evaluate a flower's color using their personal recollection (if they happened to see the plant the day it was awarded), highly variable 35-mm slides, or descriptions in Awards Quarterly. Furthermore, they must use similarly subjective terms in describing the flower they have just awarded, and so variability continues in color evaluations. The problem is not with the judges; AOS judges generally have a remarkable eye for detail, presentation, proportion, and color, and are articulate in describing those colors. The difficulty is that any verbal description of color is inherently ambiguous. Ask anyone who has shopped for red shoes to go with a red sweater how many shades of red exist. Even the most experienced and discerning AOS judge is hard-pressed to knowledgeable award up to 40 percent of the flower's maximum point score based on verbal descriptions of previously awarded plants.

We believe the American Orchid Society could virtually eliminate this problem by using PANTONE[®] color-matching identification, along with the color adjectives, in all of its award descriptions. The AOS would thus provide their judges with the most concise and complete color information possible for evaluating flower quality, and in so doing, enhance its premier leadership role in the orchid community worldwide. – *Cynthia Hill and Helmut Rohrl*