**2\_3-1 Phalaenopsis 3-24**

**Resources**: (note: some of the resources are older but provide an historical perspective; while each group has references attached to it, do not forget the overall ones at the beginning!)

**The references and assignments, individually, in part or as a whole, may be used for homework, to supplement center requirements, or as topics for discussion groups, presentations or articles. The references and assignments are meant to be a resource, not a requirement.**

Webinars:

* Trending Phalaenopsis Novelty Hybridizing. P. Lin. 06-2015. https://www.aos.org/orchids/webinars/member-only/phalaenopsis-novelty-hybridizing.aspx
* Big lip Phalaenopsis. Harper. 06-2018. <https://www.aos.org/all-about-orchids/webinars/member-only/big-lip-phalaenopsis.aspx>
* AOS 4th Orchid Culture Day “Winter Blues” February 2023 (includes blue/indigo phalaenopsis)
* Judging Novelty Phalaenopsis. Edgley. November 2021

Books and Supplements to *Orchids*:

* Christensen. *Phalaenopsis*: *a Monograph*.
* Frowine. *Moth Orchids*.
* *Phalaenopsis* Supplement to *Orchids* 2017 Oct.
* “A Phalaenopsis Hybridizer’s Journey”. Shepherd *Supplement* to *Orchids*. Oct. 2022.

General References:

* “Understanding Phalaenopsis Flower Color Genetics”. Griesbach. IPA *Phalaenopsis*. 3rd Qtr. 2013.
* “An annotated checklist of Phalaenopsis species”. Higgins. *Orchid Digest*. 2019(4) Oct-Dec.
* “Hybridizing with Phalaenopsis Species”. Livingston. *Orchid Digest*. 2002(4) Oct-Dec.
* “It’s all in the genes: 13 most important Phalaenopsis species used in hybridizing”. Harper. *Supplement* to *Orchids*. 2017 Oct. 24-37.
* “Hybridizing Phalaenopsis: Pt 1. A survey of the genus, inheritance of characteristics & selecting breeding stock”. Tippit. *Orchids*. Nov 1997 1180-1186

Journals:

The journal *Phalaenopsis* and its predecessors, current and past issues, are available online by joining the International Phalaenopsis Alliance. [www.phal.org](http://www.phal.org)

**SPECIFIC RESEARCH QUESTIONS AND RELATED RESOURCES:**

**2\_3-1a** Small-flowered species/multiflorals and miniatures including *equestris*, *lindenii*, *pulcherrima*, *stuartiana*

ADDITIONAL REFERENCES:

* “Small flowered Phalaenopsis—Part 1 Miniature multiflorals”. Coghill-Behrends. *Orchids.* March 2020.
* “Small flowered Phalaenopsis—Part 2: novelty hybrids” Coghill-Behrends. *Orchids.* May 2020.
* “Small flowered Phalaenopsis—Part 3: the crossover hybrids”. Coghill-Behrends. *Orchids*. June 2020
* “For the Love of a Little Orchid—Phal. lindenii”. Riley. IPA *Phalaenopsis*. 3rd Qtr. 2010.
* “The Mini but mighty multifloral Phalaenopsis”. Raven-Reimann. IPA *Phalaenopsis*. 1st Qtr 2007.
* “Phalaenopsis stuartiana”. Leigh. *Orchid Review*. 1982. March.
* “Phalaenopsis malipoensis and its hybrids”. Gruss. *Orchids*. Nov. 2020 873-876.
* “Phalaenopsis equestris: a quite variable species”. Gruss. *Phalaenopsis* Supplement to *Orchids.* 2017 Oct. 14-23.
* “Multifloral Phalaenopsis: Phalaenopsis stuartiana’s contribution”. Harper. *AOS Bulletin*. Feb 1993 126-133.
* “The breeding accomplishments of Phalaenopsis equestris”. Hsu, et. al. <https://www.worldscientific.com/doi/pdf/10.1142/9789811217777_0001>
* “Yellow form of Phalaenopsis mannii”. Nuynt. *Orchid Review.* Nov-Dec. 2008.
* “Three cooler growing Phalaenopsis” (lindenii, bastiani, philippensis). Cootes and Tiong. *Orchid Review*. Mar. 2013.

RESEARCH QUESTIONS:

* What is a multifloral phalaenopsis?
* What genus did *pulcherrima* belong to until the 2000s? What was the hybrid genus named between it and *Phalaenopsis* at the same time *Kingidium* was transferred to *Phalaenopsis*. Name some of the species previously included in these two genera. Did their species names change in the transfer?
* Are there flower size restrictions for multiflorals in ribbon judging? If so, what are they in your area?
* Discuss the main species in multifloral breeding and their influence? Give two or three examples of hybrids that follow that influence and describe, in your own words, why you think they were awarded (do not copy and paste the award text!).
* How would you judge multiflorals? How important is Habit and Arrangement? Flower size--bigger is often thought to be better in judging—is that true in this case?)?

**2\_3-1b** Base colors: standard whites, standard pinks and whites with markings, whites with red lips, big lips *amabilis*, *aphrodite*

ADDITIONAL REFERENCES:

* “Large White Phalaenopsis breeding: an elegant future”. Gonzalez-Costa. *Orchid Digest* 2013(4) Oct-Dec.
* “Modern White Phalaenopsis: origins and current status: hybridizing history”. Ott. *Orchid Digest*. 2001 (4) Oct-Dec
* “Phal. Doris, Phal. Grace Palm, and Phal. Dos Pueblos: Three exceptional hybrids and their descendants: Part 1: Phal. Doris”. Gruss. *Orchid Digest*. 2021(2) Apr-Jun
* “Phal. Doris, Phal. Grace Palm, and Phal. Dos Pueblos: Three exceptional hybrids and their descendants: Part 2: Phalaenopsis Grace Palm”. Gruss. *Orchid Digest*. Jan-Mar 2024.
* “Phal. Doris, Phal. Grace Palm, and Phal. Dos Pueblos: Three exceptional hybrids and their descendants: Part 3”. Gruss. *Orchid Digest*. In press.
* “Just What Makes Up Those White with Colored Lips?”. Stubbings. IPA *Phalaenopsis*. 4th Qtr. 2008.
* “’Big Lip’ Phals—genetics & breeding potential”. McKay. IPA *Phalaenopsis*. 4th Qtr. 2010.

2013

* “New Trends in Phalaenopsis Breeding (Harlequin & Big Lip)”. Srull. *Orchid Digest*. Oct-Dec. 2013.
* “Big-lipped Phalaenopsis”. Wachsmuth. *Supplement* to *Orchids*. 2017 Oct. 55-59.
* “Big-lipped Phalaenopsis. . .Breeding big-lip Phalaenopsis & its achievement in Taiwan”. Kuo & Chen. *Orchids*. Nov 2014. 692-695.
* “Spotted Phalaenopsis” (French spots type). Smith. *AOS Bulletin*. 1987. March 228-23.
* “Patterned Phalaenopsis”. Fitch. *Orchids*. November 2004. 824-828.

RESEARCH QUESTIONS:

* Discuss the species involvement in the development of large white phalaenopsis.
* Briefly discuss the influence of Phalaenopsis Doris.
* Large white phalaenopsis are considered at their apex in quality. Under what circumstances could you award one that came to your judging table or was in a show?
* Pin-spotted (other than harlequin) and striped phalaenopsis in standard phals with white backgrounds have been a mainstay for hobbyists. Give a short discussion of these and the species involved in their development with examples. What good characteristics would you look for before you award one?
* What is a ‘hilo-lip’ phalaenopsis? What species is thought to be where this type of breeding originated? What would you look for in judging them.
* Big-lip phalaenopsis created a stir in part because it was thought that breeding could impart a more impressive lip to phalaenopsis hybrids. Briefly discuss their development and role in current hybrids. What award scale would you use for these hybrids and why?

**2\_3-1c** Yellows and greens with and without markings, and art shades (often a mixture of colors with yellow and orange), including *amboinensis*

ADDITIONAL REFERENCES:

* “Pilgrimage to the Holy Grail: the development of modern yellow phalaenopsis hybrids in America”. Conkin. *Orchid Digest*. 2002(4) Oct-Dec.
* “Development of Art Shade Phalaenopsis in the US”. Fighetti. IPA *Phalaenopsis Newsletter*. Summer 2000.
* “Yellow Phalaenopsis”. Fighetti, Martin, Norton, Rose. *AOS Bulletin*. Feb 1993 134-141.
* “Yellow Phalaenopsis—80 Years of hybridizing.” Williams. *AOS Bulletin*. March 1984. 238-250.
* “The Breedin’ o’ the Green”. Gordon. *AOS Bulletin*. March 1989 226-237.

RESEARCH QUESTIONS:

* Discuss the species involved and what they contributed to yellow phalaenopsis hybrids. Look at recent awards and find three examples and look up their pedigrees. Is there consistency in the pedigrees of these (Are there main breeding lines now or have they become tertiary like large white phals)? Is fading of the yellow a problem? What would you consider to be the judging standards for these?
* Green phalaenopsis seem to come and go but not in any great numbers? Can you find any awards to them in the last ten years (hint: in Full Award search in OP, put Phalaenopsis for the genus and just the word green for the hybrid name)? If so, what made them awardable? Are they similar in form to yellows of comparable breeding or a distinct breeding line?
* Define so-called ‘art shade’. Are they a breeding line or a catch-all for cultivars that with a more unusual color? Give three examples of recent ‘art-shade’ hybrids and their recent awards.

**2\_3-1-d** Reds and purples including *lueddemanniana*, *venosa*

ADDITIONAL REFERENCES:

* “Species and Hybrids in red Phalaenopsis Breeding”. Harper. IPA *Phalaenopsis*. Fall, 2002.
* “Fun with Phals – Seeing Red”. Fang. *Orchid Digest*. 2015(4) Oct-Dec.
* “Breeding Red Phalaenopsis*”.* Goo. *Phalaenopsis* Supplement to *Orchids*. 2017 Oct 38-43
* “Breeding Trends in Red Phalaenopsis”. Ginsberg. *Orchids*. Nov 2000 1050-1061.
* “Red Phalaenopsis Hybrids”. Martin, Norton, Rose, Fighetti & Frank. *AOS Bulletin*. Mar 1993 250-257.
* “Red Phalaenopsis - Biochemistry and Genetics”. Perry. *Orchids*. 2-2024.

RESEARCH QUESTIONS:

* How do you define a red phalaenopsis? Could it be anything other than solid red? Next time you are at a show, look at the back of the flower and note what you see.
* Discuss the major species involved in developing red phalaenopsis.
* What are the qualities that we look for in modern red phalaenopsis? How do size and floriferousness come into play in the ideal vs what is possible from the pedigree?
* How deep do you think the color will progress to—will it be more of a near-black red or a version of red-purple? Can you find any awards to back this up?

**2\_3-1e** Harlequins including gigantea

ADDITIONAL REFERENCES:

* “Harlequin Phalaenopsis”. Gonzalez-Costa. *Orchids:* *Spots & Stripes* Supplement. October 2020
* “Phal. gigantea: Giant of the Genus (& hybrids)”. Lin. IPA *Phalaenopsis.* Winter 2003.
* “Influence of Phal. Golden Peoker on Harlequins”. Chen et al. IPA *Phalaenopsis*. Summer 2004.
* “Unmasking the Harlequins”. Harper. IPA *Phalaenopsis*. Summer 2004.
* “Harlequin genetics—understanding pigment production & lack of pattern control”. Stock. IPA *Phalaenopsis*. 3rd Qtr. 2005.
* “New Trends in Phalaenopsis Breeding (harlequins)”. Srull. *Orchid Digest*. Oct-Dec. 2013.
* “The Latest in Harlequin & Blue Phalaenopsis”. Mountford. *Proceedings of the European Orchid Conference*. 2003 229-240.

RESEARCH QUESTIONS:

* Outline the origins of harlequins including the contribution of *Phalaenopsis gigantea* and Golden Peoker. Compared to early harlequins, how round, full and flat are modern hybrids or is there a range?
* Do environmental conditions such as temperature and light affect them as happens in other spotted genera?
* What would you consider to be the ‘ideal’ harlequin? Try to find to examples of recently awarded harlequins that fit the ideal?

**2\_3-1f** Novelty phalaenopsis including *bellina/violacea* and *tetraspis*

ADDITIONAL REFERENCES (remember the webinars under general references!):

* “The Legacy of Phalaenopsis Dragon Tree Eagle”. Lin. *Phalaenopsis* Supplement to *Orchids*. 2017 Oct.
* “Novelty Phalaenopsis”. Lin. *Orchid Digest*. 2013(4) Oct-Dec.
* The Phalaenopsis speciosa/tetraspis complex”. Fang, Gruss & Koopowitz. *Orchid Digest*. 2019(4) Oct-Dec.

RESEARCH QUESTIONS:

* Define ‘novelty phalaenopsis”?
* What species are involved and what good or less desirable traits could they pass on to offspring?
* Dragon Tree Eagle is a modern ‘building block’ for novelty phalaenopsis. Why? What does it pass on to its offspring? What are its most successful offspring and why?
* What do you believe the goals should be for novelty breeding in the future? How do size and floriferousness play into it.

**2\_3-1f** Blue phalaenopsis

ADDITIONAL REFERENCES:

* aos webinar: Blue Phalaenopsis. Lafarge. 02-2016
* “A Decade of Chasing the Elusive Blue Phal.” Shepherd. IPA *Phalaenopsis*. 1st Qtr. 2012.
* *Hybridizers* Supplement to *Orchids*. Shephard. 2022.
* “Breeding Blue Phalaenopsis”. Lafarge. *Supplement* to *Orchids.* 2017 Oct. 60-63
* “Phalaenopsis Blues—a new frontier”. *Australian Orchid Review*. Nov 2011. 42-46.

RESOURCES:

Does blue mean the entire flower, a segment or part of a segment or could it be any or all of these? Give examples.

What are the species that might produce blue offspring?

Why is it so difficult to consistently produce blue offspring?

Should we give extra points to any flower that has blue on it simply because it is novel? What standards would you develop for judging blue for color in the quality award scale?

**2\_3-1g** Judging Phalaenopsis

ADDITIONAL REFERENCES:

* “Judging Phalaenopsis – the Basics”. Harper. IPA *Phalaenopsis*. 3rd Qtr. 2011. (EXCELLENT)
* aos webinar: Judging Phalaenopsis. Harper. 12-2016. <https://www.aos.org/all-about-orchids/webinars/judging/judging-phalaenopsis.aspx>
* aos webinar: Judging Novelty Phalaenopsis. Edgley. November 2021
* Handbook on Judging

RESEARCH QUESTIONS:

* Discuss the qualities that the Handbook suggests we judge for form, color, floriferousness, etc.
* How well do many of the *bellina*/*violacea* modern hybrids and species such as *venosa* fit into the standards set for the Phalaenopsis Scale? Explain. How would you solve that?
* Miniature and small species often do not have full and round form, many flowers and the arrangement may not compare to big whites or pinks, so how would you judge them?
* Consider standard large whites, pinks and even some yellows that will produce inflorescences with many flowers that are well-shaped. Given existing quality, do you believe there is still room for additional awards? Why or why not?
* For flowers with markings or harlequin-style patterns, how symmetrical and consistent should the markings or patterns be? What would it take for you to deduct points?
* Many of the brilliantly colored modern hybrids flower sequentially. Would you penalize them for flowers that have obviously come and gone? How does sequential blooming affect overall flowers per inflorescence? Does it make it harder to have a higher flower count as compared to multiflorals or whites—what should the minimum be for flowers per inflorescence to give even an HCC, an AM, an FCC?
* Are ridges or grooves along the midline of the petals a fault in complex hybrids?
* A species such as *Phalaenopsis micholitzii* is known to produce somewhat translucent segments. With colors, translucence tends to ‘lose’ the intensity of color. So, to what would you suggest breeding such a species to improve the score for substance and texture?