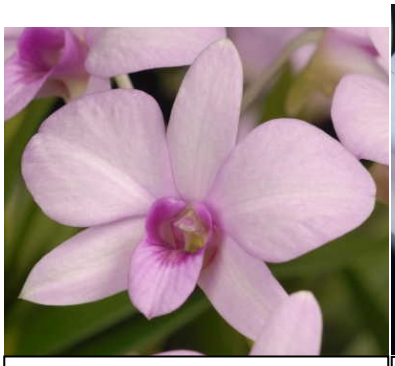
Dendrobium Section Phalaenanthe
Schlechter, Die Orchid. Due. Nue Guinea (1912)
Type: Dendrobium [Den.] bigibbum [den-DROH-bee-um bye-JIB-bum]
Color Breeding Lines

Dendrobium bigibbum
'Zelda Neuendorff' HCC/AOS
Apr 2001, NS 5.8 x 4.3 cm

The species in the Phalaenanthe section are dominate in color. The negative is the limited color pallet. Flower color ranges from violet, deep lilac, purple, magenta, pale lilac, rosey mauve to white, see pictures below. Prior to further discussion on color, I need to point out that early Den. Bigibbum var. superbums (aka. Den. phalaenopsis) AOS awardees, seven cultivars (3 AMs, 4 HCCs), were NOT uniform in color, see picture on the right. I suspect this was either a "Judging Fad" or a 'sport' (to be discussed). I only point this out because we are still seeing crosses (but NOT in todays line bred Den. Bigibbum var. superbum line) being awarded with colored distal sepals and/or petals.

Den. bigibbum
'Louise Uedoi' HCC/AOS
Oct 1995, NS 8.0 x 7.2 cm



Den. bigibbum
'Linda's Forever' AM/AOS
Aug 2007, NS 5.8 x 4.8 cm

Den. affine
'Graham' HCC/AOC
Apr 2002, NS 5.4 x 5.1 cm

Den. williansianum
'Ruth' CBM/AOS
May 1976, NS 5.7 cm

Den. Bigibbum var. superbums
'Holly' HCC/AOS
Sep 1987, NS 7.8 cm

Early breeding programs either improved the species by line breeding, compare line breed awarded clone 'Zelda Neuendorff' with in situ cultivars above (deeper color and fuller

form), or by the introduction of a species from another dendrobium section and then crossing back select clones within Phalaenanthe section, resulting in small percentage of the introduced specie(s), an example is on the right (Den. Red Maroon 'The Bob' AM/AOS) is over ~90% Den. bigibbum (15.1% Den. Bigibbum, 52.4% Den. phalaenopsis, 13.6% Den. schroederianum, 9.1% Den. superbiens and the most recent species was used 6 generation back) and less than 10% all other species (6.5% Den. tariunum, 2.8% Den. tokai, and 0.4% Den. discolor). This later approach was used to enhance the flower color (in the specific case to the right a darker, deeper shade of red purple, could have shown similar pictures for other Phalaenanthe Section color forms) and introduction of hybrid vigor. [Note: Den. superbiens is a natural hybrid between Dendrobium bigibbum and Den. discolor].

As a side note, line breeding will tend to stimulate 'sports' (a plant(s) with morphological differences from the rest of pod siblings). Lines of breeding that have been generated from sports are: splash petal, pansy, stripes (collected from rubble while installing transmission lines), blue, etc. Examples are shown below.

Den. Red Maroon
'The Bob' AM/AOS
Jun 2015, NS 6.4 x 6.0 cm

Den. Candy Stripe
'Odom's Delight' AM/AOS
Feb 2015, NS 7.4 x 6.5 cm

Den. Kuranda Classic
'Violete' HCC/AOC
Apr 2012, NS 8.0 x 8.3 cm

Den. Candy Stripe
'' AD/AOS
Oct 1981, NS 8.3 cm

Den. Aridang Blue
'Sarah's Jewel' AM/AOS
Sep 2018, NS 6.5 x 6.5 cm

Additional colors have been a desire in Den. Bigibbum breeding lines and this is presently being addressed by the introduction of Spatulate traditionally and recently, with very limited success, Latouria species. The major color that is being introduced is Yellow / Green. Examples of recently awarded cultivars are shown below:

Den. Burana Jade
'Sharimabelle' AM/AOS
Mar 2017, NS 6.1 x 5.5 cm

Den. Thongchai Gold
'Piinnwattana' HCC/AOS
Jun 2017, NS 7.0 x 6.0 cm

Den. Verde Luz
'Nirberto Molina' AM/AOS
Jul 2017, NS 10.0 x 7.0 cm

Den. Aridang Green
'Charmaine Finch' AM/AOS
Apr 2015, NS 6.5 x 5.0 cm

The following observations were made after looking at the five recently, 2017-May 2020 and 2015, awarded Den. bigibbum green / yellow grexes:

1. As a general rule, the percentage of Den. bigibbum is less than 50%, while the percentage of the yellow / green species is 35 to 65%. The yellow / green species with usually the largest percentage contribution is Den. schulleri, see picture below and is in the parentage of all the awarded crosses. Only one other yellow / green species was in all crosses, Den. tokai with between 8 to 18% genetic contribution, also shown below. Other non-Den. bigibbum species that were in the top three

genetic contributors, in order of number of times used are Den. discolor (in 3 of 5 crosses), Den. gouldii and Den. stratiotes (each in 1 of 5 crosses).

Den. schulleri
'Kalfred Yee' AM/AOS
Jun 1967, NS 6.1 x 5.5 cm

Den. tokai

Den. discolor
'Karlo Javy' AM/AOS
Mar 2019, NS 3.2 x 3.2 cm

Den. gouldii

2. Den. bigibbum is genetically around 50% or less due color dominance.
3. All five of the awarded crosses are progeny of Den. May Neal.

Den. May Neal (Den. Hawaii x Den. schulleri), 1949, William Kirch Orchids, 171 F1 and 2334 total progeny, 9 AOS awards (5 AMs, 2 HCCs, 2 CCMs). Select progeny: **Den. Pixie Princess** (Den. Pixie Nani x Den. canaliculatum), 1986, F. Aisaka, 6 F1 progeny, 7 Aos awards (1 AM, 3 Hccs, 2 CCEs, 1 CCM); **Den. Palolo Sunshine** (Den. Anching Lubag x Den. Shogun), 1989, Bee Lian, 67 F1 and 118 total progeny, 11 AOS awards (6 AMs, 5 HCCs); **Den. Liholiho** (Den. May Neal x Den. Ethel Kawamoto), 1956, Mrs. J. McCoy, 68 F1 and 427 total progeny, 4 AOS Awards (2 AMs, 2 HCCs); **Den. Anching Lubag** (Den. Betty Ho x Den. Stacee Ohashi), 1984, Miyamoto, 62 F1 and 272 total progeny, 2 AOS Awards (1 AM, 1 HCC).

Den. May Neal
'Taino' AM/AOS
Feb 1976, NS. 7.5 cm

Den. Pixie Princess
'Ametrine Empress' HCC/AOS
Apr 2005, NS 6.0 x 5.0 cm

Den. Palolo Sunshine
'Exotic Gold' AM/AOS
Sep 2010, NS 9.0 x 7.5 cm

Den. Liholiho
'Robert Perreira' AM/AOS
Mar 1969, NS 7.0 cm

Den. Anching Lubag
'Remar' HCC/AOS
Apr 1986, NS 7.6 cm

The final breeding line that will be addressed is with the Latouria Section. The positive qualities added are floriferous, heavy substance, and sometimes fragrance; while current the resulting crosses do not add to the Den. bigibbum color palette. A typical flower is shown to the right. Some of the Latouria species that have been used are (in no particular order): Den. alexandrae, Den. johnsoniae, Den. eximium, Den. spectabile, Den. atroviolaceum, Den. convolutum, etc.

Den. Crystal Rose
'Sarah Jane' HCC/AOS
Mar 2017, NS 6.2 x 5.0 cm

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Dendrobium Breeding Lines.
What might we be seeing at the Judging Tables now and in the near future?

To address these two questions, I reviewed the table below. In regards to breeding lines, as indicated in the table below, I have split Dendrobiums into seven major breeding lines; Phalaenanthe Section hybrids (Den. bigibbum), Spatulata Section Hybrids, Densiflora and Formosae Section Hybrids, Dendrobium Section Hybrids, Latouria Section Hybrids, Australian Dendrobium Hybrids, and remaining sections. I then reviewed AOS awards given to Dendrobiums given during a year and placed them into one of these major breeding lines.

AOS Awardees by 'SWROGA Schedule'

	2020	2019	2018	2017	2015	2010	2000	1980	Key Species	F1	Total
bigibbum	2	7	7	10	16	8	18	6	bigibbum	633	7,906
Spatulata 'Twisted'	1	15	12	14	14	11	24	5	taurinum discolor	153 152	5,186 3,691
Spatulata 'Not Twisted'	0	1	0	0	0	1	0	1	canaliculatum	214	625
Callista / Formosae	0	6	1	5	2	4	4	2	chrysotoxum formosum	36 46	45 124
Nobile (Dendrobium)	2 + 0	3 + 4	3 + 3	3 + 0	4 + 1	6 + 0	3 + 1	5 + 0	nobile	99	2,609
Latouria	6	20	18	13	14	7	4	0	atroviolaceum macrophyllum	47 41	267 228
'Dockrillia' (Rhizobium Section)	1	1	0	0	2	0	0	0	fuliginosum	33	173
Australian (Dendrocoryne Section)	8	13	7	8	9	15	6	1	speciosum tetragonum	255 70	1154 1352
All Other Sections	1	9	3	4	2	4	0	0			~700
Total	21	79	54	57	64	56	60	20			13,880

NOTE1: If a hybrid received more than one award in a calendar year it was counted only once, such as multiply awards per cultivar or multiple cultivars.

NOTE2: A cultivar winning awards in separate years will be counted in once in appropriate years.

NOTE3: For the Dendrobium Section, there are two numbers separated by a "+" sign. The first number is the number of Nobile type hybrids receiving awards while the second number reflects the remaining Dendrobium Section hybrids.)

The last three columns list key species of each section, corresponding number of first-generation progeny and total progeny for this species.

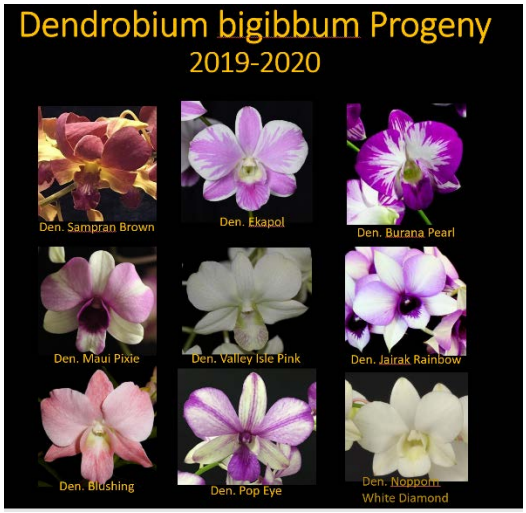
I also split Spatulata and Australian Sections into two sections.

First some general comments.

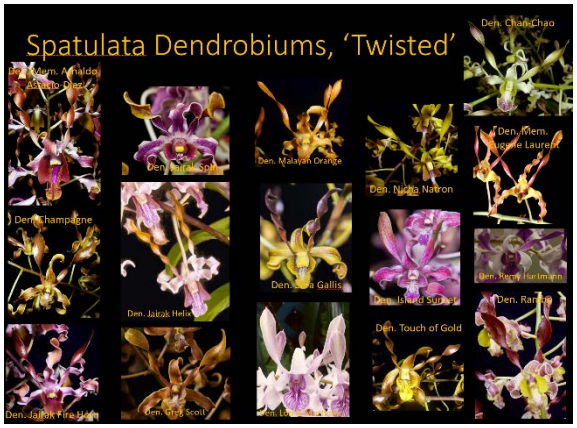
The number of Dendrobium hybrids receiving AOS awards is presently around 50 to 80 a year and appears to have been in this vicinity since 2000. This is up from the 20 to 30 Dendrobium hybrid AOS awardees in the 1979-1981 timeframe. Is this due to an increase in breeding activity, new breeding trends that have caught the public / judges eye, or is it due an increase in interest of growing orchids (you can now purchase orchids in grocery / large box stores).

The other point is the trend to smaller size, compact, plants. Mature / well grown early Dendrobium hybrids generally had canes thar were 1 or more meters in length, were as most current plants are less than half a meter in cane length.

Individual Section comments



Phalaenanthe Section hybrids (Den. bigibbum) – AOS awarded plants appear to be relatively low but constant. There are usually around 10 awardees per year, some years there number of awardees will be in the high teens. The recent awarded clones trends tend to be strips, peloric, green and pastel colors. The lavender clones that are awarded tend to be VERY dark or bright colored. I am surprised that there are not more yellow or colored lips awardees.



Spatulata Section Hybrids – The number of awarded spatulata hybrids has generally been around 10 to 15 for the last 20 years occasionally getting in the low twenties. The recent dominate color form being award are dark old gold to dark yellow brown. The recent trend tends may be to brighter and lighter colors.

Not all spatulata hybrids/species are 'twisted', and these tend to not catch a judges eye and are rarely awarded. We will be seeing more of these since the parent species tend to be compact growers.

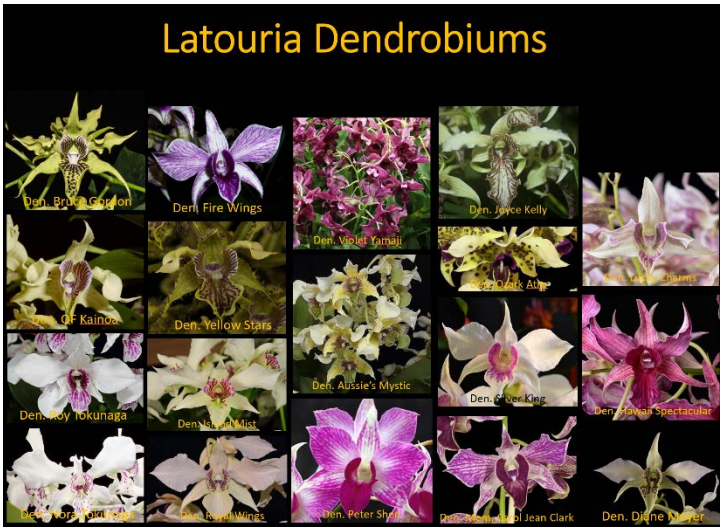
Densiflora and Formosae Section Hybrids – The hybrids in these sections tend to be very showy but with little color variation, generally either white or yellow with darker (yellow, orange, to red) lips. For the past 40 years there have been less than 5 awardees per year in these sections total. Presently there does not to be any significant changes / trends in breeding.

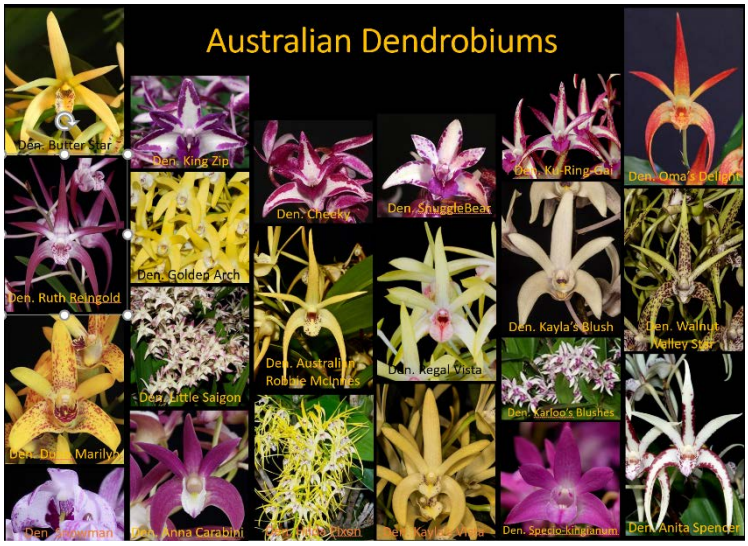
Dendrobium Section Hybrids – This section is easily divided into two sections, Nobile type hybrids and everything else.

Nobile hybrids have evolved to a VERY high level that over the past 40 years there are generally less than 5 AOS awardees per year. No recent breeding trends stand out.

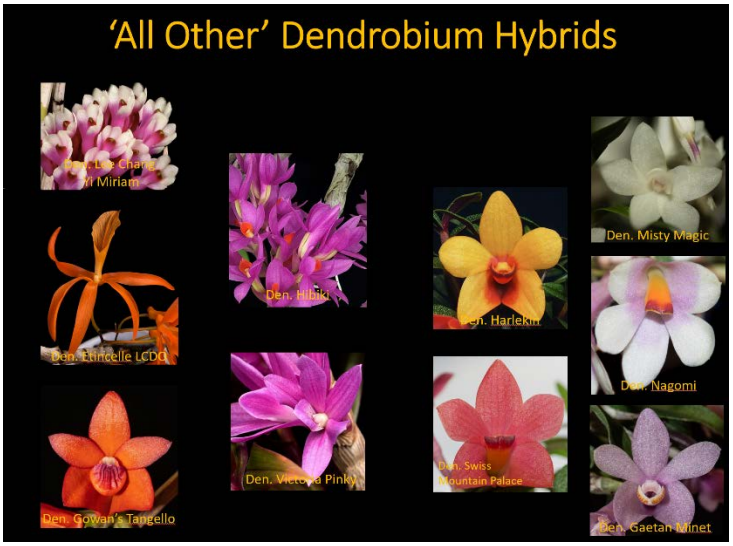
There does appear to be an increase in the number of 'Dendrobium Section hybrids that are NOT nobile type'. As the nobile type, the flowers are very showy and the floral display catches your eye. The number awardees generally none per year but in the last few years this has change to be around three awardees per year.

Latouria Section Hybrids – Latouria secions hybrids have increasingly shown up on the judging tables since the turn of the century, from only four in 2000 to twenty awardees in 2019. The latest breeding trends tend to focus on Den. atroviolaceum hybrids, looking for flatter and larger long lasting flowers on compact plants, eye catching lips, and strips. Another breeding trend is with Den. convolutum resulting in green flowers with dark lips. A third trend is breeding with Den. aberrans resulting in very compact plants with a large number of flowers.





Australian Dendrobium Hybrids – The group of plants that most people think of as Australian Dendrobiums come from the Dendrocoyne and Rhizobium Sections. Although it is generally thought that these are the latest and greatest dendrobiums to appear on the USA scene, they have been receiving 7 to 15 awards for the last 10 years. There appears to be a recent up tick in awards due to availability and USA breeding. Recent breeding trends are towards fuller larger flowers and introduction of Dendrobium tetragonum into breeding programs.



Remaining sections – The remaining AOS awarded dendrobiums are generally from the Calyptrochilus Section. The most awarded breeding line envolves Dendrobium cuthbertsonii followed by Dendrobium bracteosum.

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Award Descriptions (Aug 2020)

Dendrobium Sunglow – Quality Award Description
(Den. speciosum x Den. fleckeri)
Forty-three golden flowers on two slightly arched inflorescences; dorsal sepal erect; lateral sepals pendulous arch; petals blushed orange apically, recurved and reflexed; lip cream, tri-lobe, lobes golden, blotched marron; column and anther cap golden; substance firm; texture diamond-dust.

Dendrobium Somsak – Quality Award Description
(Den. Rakpaibulsombat x Den. Theodore Takiguchi)
Thirty-three full flowers and twelve buds on two inflorescences; flowers white, lateral sepals apically midrib green; lip white, throat heavily overlaid raspberry, serrate edge; column and anther cap white, lightly overlaid raspberry; substance firm; texture matte.

Dendrobium Yellow Ribbon – Cultural Award Description
(Den. Golden Blossum x Den. Hambuhren Gold)
One hundred twenty-three pristine, stellete flowers and 17 buds beautifully presented on 50 inflorescences borne on 15 canes of a 45-cm wide by 30-cm tall robust, beautifully vase-shaped specimen grown in a 16-cm wide by 10-cm tall plastic pot; flower golden; lip golden, throat darker; column and anther cap cream; substance firm; texture matte.

Dendrobium Colonial Surprise – Quality Award Description
(Den. Aussie Angel x Den. Aussie Ira)
Twenty-two stellate flat flowers and one bud well arranged on three inflorescences; sepals white heavily overlaid dark marron, basally transiting to lightly overlay, thin white picotee; petals white overlaid dark maroon; lip white, trilobe, sidelobes lightly overlaid mark marron, mid lobe overlaid very dark maroon, thin dark white picotee, keel and throat white; column white overlaid lightly maroon; anther cap white; substance firm; texture matte.

Dendrobium Goldenrod – Quality Award Description
(Den. Floy Day x Den. Liholiho)
Twenty-four, light lime green flowers on a 41-cm inflorescence; sepals cupped, slight twist and recurve apically; petals recurved, slight twist; lip tri-lobed, open, central keel area white; column and anther cap light lime green; substance firm; texture matte.