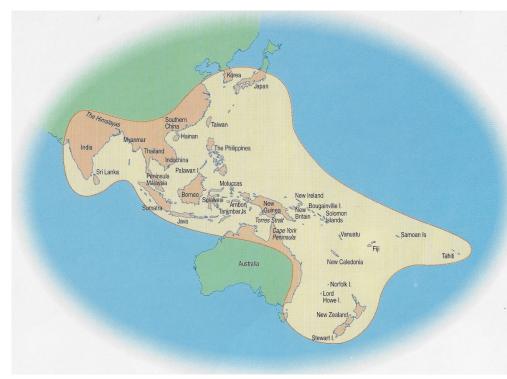
The Genus Dendrobium

Nova Acta Regiae Soc. Sci. Upsal. 6: 82 (1799), nom. cons.

Type: Dendrobium [Den.] moniliforme

[den-DHOH-bee-um tess-sel-LAY-tah]

Dendrobium is the second largest genus after Bulbophyllum with over 1200 species ranging through all parts of East Asia (India east and north to Korea / Japan), Australia, and the southwest Pacific Islands. It is the second most





Dendrobium moniliforme 'Banriko' AM/AOS Apr 1994, NS 4.8 x 6.2 cm

common orchid genera in cultivation after the Cattleyas. They grow in habitats ranging from semi-desert to rainforest, from hot steamy lowlands to

the Himalayan foothills to New Guinean altitudes of 3800 meters (12,500 ft.). Most are equally at home as either epiphytes or sometimes lighophytes and there are even a few terrestrials. Being such a large group of species, the vegatative growth can range from vine like, to stems, to pseudobulbs up to five meters long. While they differ widely in their vegetative characters, there are features of the flowers that unite the genera. The column has a prominent foot and the flowers usually have a spur formed from the column foot or by the lip and column foot; the anther is terminal with two cells and four naked pollinia in two pairs without caudicles or viscidia. The most identifing feature is the mentum that is formed by the fusion of the column foot with the bases of the lateral sepals. The lip is divided into a claw and lamina, with the claw fused to the base of the column foot. The variety of brightly colored flowers can last for 1 day to months dependent on the species. This very diverse group results in species cultural requirements need to be customized for each species.

Of the roughly 1200 species only 283 have been used in hybridization while 405 have received an award. I would be surprised there aren't hidden gems yet to be found in this genus.

Common Name or Meaning - Greek for "living on a tree"

Generally, you would point scale using the dendrobium point scale for progeny of Phalaenanthe Section (such as Den. bigibbum) while most other Dendrobiums would use the General scale.

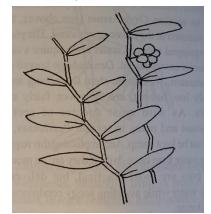
Dendrobiums are divided into the following 42 sections (NOTE the section data is from www.orchidspieces.com, sections identified by Lavarack and Wood included for completeness. www.orchidspieces.com list sections Lichenastrum and Rhizobium as being transfer into Genus Dockrillia but Kew still has them as Dendrobiums, I have left them in as Dendrobium). The following section table includes Section name, if moved – to section or genus, Section creation reference, type species and photo, number of species in section, Geographic distribution of section, brief key description and folia/growth habit line drawing of section species:

SECTION Amblyanthus Schlechter 1905 – Dendrobium melanostictum



Characterized by the tall, leafy, evenly swollen stem with a generally single, terminal on a leafy stem, tight, many flowered inflorescence enveloped by distinctive imbricate bracts. The outer surface of the flowers, the stems and in some cases the leaves are covered with a brown furfuraceous covering. The flowers do not open well and they are often yellow on the exterior and mostly white inside, and there is a more or less ovate, fleshy lip without much if any sidelobes, a shelf like retrose lamina on the lip with a saclike mentum opposite the cavity on the column

10 Species, New Guinea

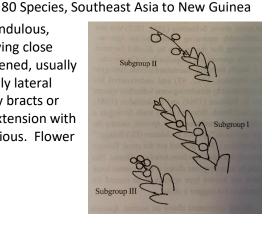


foot and in most cases the lip is papillose. Bloom time: varialbe. Flower duration: up to two weeks.

SECTION Aporum Lindley 1850 – Dendrobium lobatum



Characterized by the initially erect then pendulous, short to moderately long, leafy stems carrying close spaced to overlapping based, laterally flattened, usually acute tipped leaves that blooms with usually lateral with a single flower from a cluster of chaffy bracts or from along an elongate terminal leafless extension with short lived, small flowers. Bloom time: various. Flower duration: up to one month.



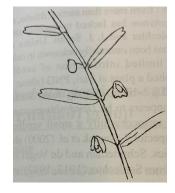
SECTION Australorchis now SECTION Monophyllaea Bentham 1873

SECTION Biloba J J Smith 1905 – Dendrobium bilobum

18 Species, New Guinea - Indonesia - Australia - Oceania



Characterized by the long and very slender stems often forming large clumps with thick roots carrying 2 ranked, prominently sheathed leaves held all along the stem that blooms on an axillary inflorescence carrying small cup shaped single flowers with distinctly 3 lobed lip. Apex of lip thickened in many species. Bloom time: year round. Flower duration: several days.



Indonesia



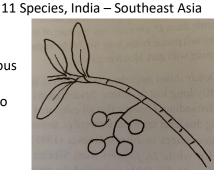
Characterized by the short stems with a single internode carrying 2 subterminal, coriaceous, rounded leaves and giving rise to 2 pseudo terminal flowers. Bloom time: various. Flower duration: one day.



SECTION Breviflores Hkr.f. 1890 - Dendrobium bicameratum



Characterized by the mostly slender stems that are swollen and pseudobulbous toward the apex and leaves along most of the stem and carrying deciduous in 2 to 3 years leaves that blooms on short, 3 to 10 flowered inflorescence carrying rather small, pink to yellow colored flowers with the base of the lip [the mentum] saccate and apically trilobed and usually hairy along the edges. Bloom time: Spring. Flower



duration: about 2 weeks

SECTION Brevisaccata Kraenzl. 1910 – Dendrobium agrostophyllum

6 Species, New Guinea - Australia - Oceania



Characterized by the upright, linear to obclavate, leafy all along, growing for up to 3 years, to 3' 4" [1 meter] or more long stems that blooms on several, terminal, short, multiflowered inflorescence carrying rather small flowers with a unique, hinged, spatulate lip structure, a saccate mentum that is ribbed by the arching column foot which gives rise to the sepals and a median keel that projects backward as a retrose internal spur.



Bloom time: various centered in Spring. Flower duration: about two weeks.

SECTION Calcarifera J J Sm. 1908 – Dendrobium pedicellatum 93 Species, India – Southeast Asia – Indonesia - Philippines



Characterized by the verrucose roots, slim to fusiform, leafy, semideciduous, often pendulous, often growing more than one per year stems that bloom on numerous, short, lateral, pendent racemes on newer and older leafless stems and the pedicel is inserted at a right angle to the mentum. This final item of morphology is probably the best distinguishing feature between the section Pedilonum and Calcarifera. Bloom time: summer and fall. Flower duration: one to four weeks.

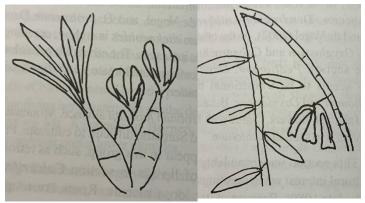


SECTION Callista now SECTION Densiflora Finet 1903

SECTION Calyptrochilus Schlechter 1905 – Dendrobium lawesii



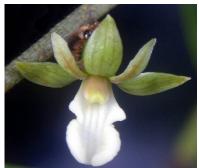
Characterized by the long, leafy, slender, usually pendulous stems carrying deciduous within a year or 2, two ranked flowers along the stem on lateral inflorescence, arising on leafless stems and carrying flowers that have the apex of the lip infolded to make it boat shaped and fringed. 59 Species, New Guinea - Australia - Southeast Asia



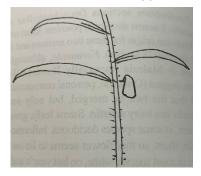
Bloom time: all year. Flower duration: exceptional, up to eleven months. Potential for two subgroups.

SECTION Cannaeorchis now SECTION Macrocladium Schlechter 1906

SECTION Conostalix Kraenzl. 1910 - Dendrobium lobbii 10 Species, Borneo - Southeast Asia - Indonesia - Philippines

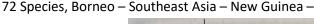


Characterized by the thin stems and leaves with hairy sheaths, branching stems and the smaller flowers are often non-resupinate. Bloom time: tends to be summer and fall. Flower duration: several weekw.



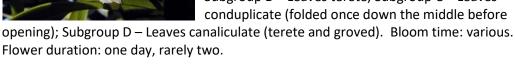
SECTION Crumenata Pfitzer 1889 – Dendrobium crumenatum

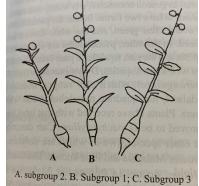






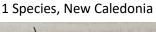
Characterized by the long, slender basally swollen stems carrying fleshy overlapping leaves that blooms with usually single flowers on the apical elongate leafless stem and carrying short lived flowers that are brought on by a temperature drop. This large sedtion can be further sub-divided into subgroups: Subgroup A – Leaves laterally flattened; Subgroup B – Leaves terete; Subgroup C – Leaves





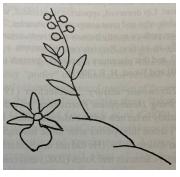
SECTION Cuthbertsonia now SECTION Calyptrochilus Schlechter 1905

SECTION Dendrobates [Clem & Jones] H P Wood 2006 – Dendrobium virotii





Characterized by the apparantly smooth roots arising from a series of keiki-like stems, climbing vine like, each stem about 14" long, the newest leafy and can attain a height of 2 meters. The inflorescence is erect and carries up to 25 well spaced flowers which have a small decurved mentum, a cordate lip with small 4 pointed side lobes and a deflexed midlobe with a minimal crest. Bloom time: late Spring. Flower duration: no information available.



SECTION Dendrobium Lindley 1844 – Dendrobium moniliforme

57 Species, India - Southeast Asia - Australia



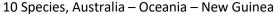
Characterized by the stems of moderate length that are often swollen to form clavate pseudobulbs carrying deciduous, leaf sheathed leaves

that are held in the upper 2/3's of the stem, and bloom on short to long racemes, arising

per 2/3's of the stem, long racemes arising

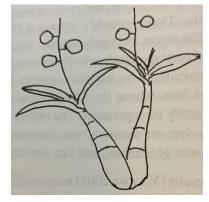
from the apical part, occurring in the dry season, inflorescence carrying large showy flowers with an entire tomentose (velvety) lip in most species lacking sidelobes with a short mentum. Section divided into sections dependent on blooming on current lead, last years lead, and penultimate lead. Bloom time: spring. Flower duration: about four weeks.

SECTION Dendrocoryne Lindley 1842 – Dendrobium tetragonum



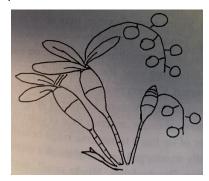


Characterized by the several noded pseudobulbs carrying 2 to 6 leaves at or near the apex and they have no leaf sheathing bases. The inflorescence are subapical, racemose and have a distinct peduncle and rarely have one or 2 less fleshy flowers and mostly have many. The lips are trilobed and have more or less erect sidelobes that are attached to the column foot apex. The disc and the keels of the lip are not close to the column as the lip is not strongly hinged. The disc has one to 3 lower keels. Bloom time: early Spring. Flower duration: one to two weeks.





Characterized by the often shortened, fusiform to clavate stems carrying a few terminal leaves that blooms on a single, terminal, usually pendulous, multiflowered inflorescence on new and older stems carrying usually yellow, sometimes pink flowers. Bloom time: Spring. Flower duration: about one week.



SECTION Dichopus NOW Genus Grastidium

SECTION Distichophyllae Hkr.f. 1890 – Dendrobium revolutum

34 Species, Borneo – Southeast Asia - Indonesia



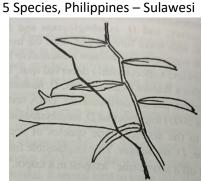
Characterized by the stiff stems, rigid straight leaves multiple few flowered inflorescence on leafy stems and carrying white single to multiply few flowers held close to the stem. Bloom time: summer and fall. Flower duration: more than two weeks.



SECTION Dolichocentrum Schlechter 1911 - Dendrobium furcatum



Characterized by the smooth heavy roots, unswollen straight stems sometimes branched, slim, lanceolate leaves, large single flowers a peculiar column with an elongate foot and stelidia that overtop the anther. Bloom time: Fall and Winter. Flower duration: about one week.



SECTION Eleutheroglossum Sclechter 1906 – Dendrobium closterium

4 Species, New Caledonia – Australia



Characterized by the compact, several noded pseudobulbs carrying leaves with short sheaths and blooms on a subterminal inflorescence carrying flowers with erect lateral sepals and a forked lip. Bloom time: later Spring and summer. Flower duration: one week or more.



SECTION Eriopexis Schlechter 1912 - Dendrobium eriopexis



Characterized by the plants similar to Section Grastidium and the flattened sheaths covering the stem the long curved column foot and the variably hairy crest. NOTE: Photo is of Den. hellerianum, only photo available of any species in section. Bloom time: Year round. Flower duration: one or two days.

5 Species, New Guinea

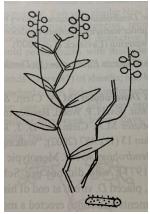


SECTION Euphlebium now SECTION Fugacia J J Sm. 1905 SECTION Finetianthe Ormerod 2002 – Dendrobium finetianum



Characterized by the elaborate lip with a pubescent hypochile and a pubescent front surface of the column. Bloom time: various. Flower duration: no information available.

1 Species, New Caledonia

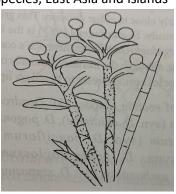


SECTION Formosae [Benth & Hkr.f.] Hkr.f. 1890 - Dendrobium formosum



Characterized by the unusually long, robust pseudobulbs carrying leaves all along the length with leaf sheaths that are covered in black hairs and last for several years and have 1 to 3 flowers in a group in the upper part of the stem that are large, showy, waxy, thin, long lasting usually with white predominate flowers that have a 3 lobed lip apex. Bloom time: Spring. Flower duration: generally more than a month.

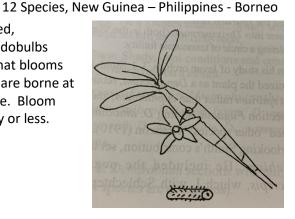
52 Species, East Asia and Islands



SECTION Fugacia J J Sm. 1905 – Dendrobium spurium

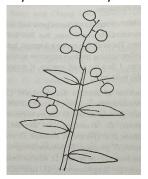


Characterized by the club shaped, angled, sometimes square in crossection pseudobulbs carrying a few, usually 2 apical leaves that blooms with flowers that only last one day and are borne at the apex or in lateral short inflorescence. Bloom time: various. Flower duration: one day or less.





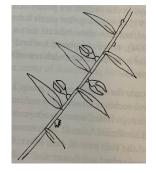
Characterized by the slim leafy stem carrying usually an apparently terminal raceme on the newest mature pseudobulb and a large flower with wide petals and lip. Bloom time: Fall (one species). Flower duration: several weeks.



SECTION Grastidium [Bl.] J.J.Sm 1905 - Dendrobium salaccense132 Species, East Asia - Australia - New Guinea - Oceania



Characterized by the long slender stems with basally sheathed leaves all along the length and carrying short-lived flowers produced laterally in pairs with trilobed lip with a prominent mentum. Bloom time: year round. Flower duration: less than one day.



SECTION Herbacea Kraenzl. 1910 – Dendrobium herbaceum



Characterized by the upright, fusiform, deciduous stem with multiple branches and small flowers on bare branches. Bloom time: Spring. Flowers open sequentially over a period of weeks.

3 Species, India

SECTION Herpethophytum Schlechter 1912 – Dendrobium herpetophytum



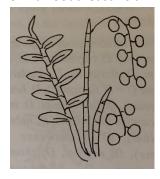
Characterized by the similarity to Section Monanthos but with a creeping habit, stems sometimes branched, a different flower structure, gregarious blooming and endemic to New Guinea. Bloom time: year round. Flower duration: one day.

11 Species, New Guinea





Characterized by the tall semideciduous stems with subterminal inflorescence arising on leafless stems and carrying several mostly yellow flowers often with dark bullseye markings. Bloom time: Spring. Flower duration: about ten days.



SECTION Inobulbum now GENUS Inobulbum SECTION Kinetochilus Schlechter 1907 – Dendrobium pectinatum



Characterized by the large plants with smooth roots and unbranching leafy stems and carrying flowers with a mobile spatulate lip. Bloom time: year round. Flower duration: no information available.

3 Species, New Caledonia



SECTION Latouria [Bl.] Miq 1859 - Dendrobium spectabile 52 Species, New Guinea (mostly) - Oceania

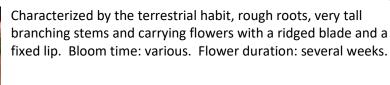


Characterized by the close set, variably club shaped, some being stout and others elongate and slender stems carrying towards the apex of the stem leaves that do not have sheathing bases and blooms on a near terminal, few flowered inflorescence carrying fleshy flowers that have a prominent three lobed lip with a prominently raised callus. This diverse section can be divided into the following alliances: 1) Dendrobium macrophyllum alliance; 2) Dendrobium

20

spectabile alliance; 3) Dendrobium johnsoniae alliance; 4) Dendrobium terrestre alliance; 5) Dendrobium simplex alliance; 6) Dendrobium punamense alliance; 7) Dendrobium bifalce; 8) Dendrobium aberrans alliance. Bloom time: Spring and fall. Flower duration: up to 3 months.

SECTION Lichenastrum now in SECTION Rhizobium
SECTION Macrocladium Schlechter 1906 – Dendrobium sarcochilus



6 Species, New Caledonia





Characterized as a tiny plant with creeping single noded, ovoid stems carrying a single, apical, leaf giving rise to a terminal inflorescence carrying yellow brown or dark violet with yellow tips flowers. Bloom time: Summer. Flower duration: around three weeks.



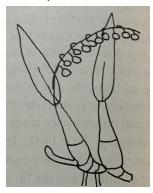
SECTION Monathos now SECTION Biloba J J Smith 1905

SECTION Monophyllaea Bentham 1873 – Dendrobium monophyllum



Characterized by the smooth roots, ovoid, 1 to 2 noded, swollen pseudobulbs carrying 12 or 2, terminal, long, thin, slim leaves that blooms on a nodding to pendulous, pseudoterminal inflorescence arising on the newest mature pseudobulb and carrying compact flowers. They are also endemic to Australia. Bloom time: late Spring. Flower duration: up to two months.

3 Species, Australia



SECTION Oxyglossum now SECTION Calyptrochilus Schlechter 1905 SECTION Oxystophyllum [BI] Miq 1859 – Now Genus Oxystophyllum

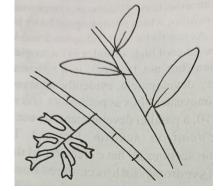
Philippines

SECTION Pedilonum Blume 1825 – Dendrobium secundum

45 Species, New Guinea - Southeast Asia - Indonesia -



Characterized by the small to medium sized epiphytes or occasional lithophytes with fleshy, usually pseudobulbous, carrying 2 ranked, deciduous in one to 2 year leaves held all along the stem and carrying elongate, brightly colored flowers with a long mentum or chin held close to the pedicel and ovary and the lip is relatively narrow and narrows gradually at the base. Bloom time: variable among species. Flower duration: may stay in bloom six months.

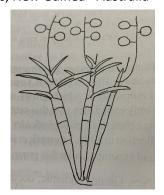


SECTION Phalaenanthe Schlechter 1912 – Dendrobium bigibbum

7 Species, New Guinea - Australia



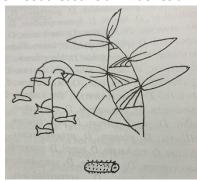
Characterized by the short to long or compact stems carrying leaves towards the apex that blooms on long, arching inflorescence carrying large, showy, wide opening, long lasting, purple, pink or white flowers with petals and sepals that are larger than the lip. The mentum usually has 2 chins. Bloom time: late Summer and Fall. Flower duration: average two months, can be as long as five months.





Philippines

Characterized by the verrucose roots, ovoid, flattened but leafy pseudobulbs a geotropic inflorescence carrying whitish flowers with elaborate keels on the lip. Bloom time: Fall-Spring. Flower duration: a week or less.



SECTION Pleianthe Schlechter 1912 - Dendrobium pleianthum



Characterized by the plant similar to Section Grastidium but has many flowers on a short inflorescence. Bloom time: Summer. Flower duration: several days.

1 Species, New Guinea

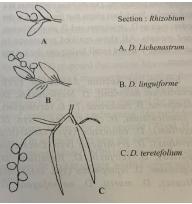


SECTION Rhizobium, Lindley 1850 – Dendrobium linguiforme



The unique feature of this section is that the rhizome and the shoot are not differentiated. Thus, the plant, like a Masdevallia, appears to have no definite stem. The sections is divided into three Alliances: Den. lichenastrum Alliance, Den. linguiforme Alliance, and Den. teretefolium Alliance. This section was once identified as the GENUS Dockrillia.

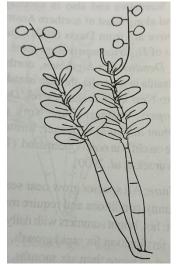
23 Species, Australia



SECTION Spatulata Lindley 1843 - Dendrobium antennatum 50 Species, New Guinea - Indonesia - Australia - Philippines

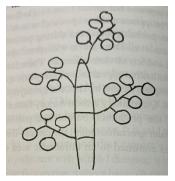


Characterized by the long pseudobulbs carrying all along the stem, 2 ranked leaves that blooms on 1 to more, long, multiflowered inflorescence arising from the apical nodes of the stem carrying wide open, long lasting flowers with mostly twisted petals and sepals, tri-lobed lip with 3 or more keels along the midlobe and a prominent mentum. This section is further divided into five alliances: 1) Dendrobium antennatum alliance; 2) Dendrobium canaliculatum alliance; 3) Dendrobium taurinum alliance; 4) Dendrobium lineale alliance; 5) Dendrobium cochliodes alliance. Bloom time: generally Spring. Flower duration: up to three months.





Characterized by the multi-flowered inflorescence on this years mature, leafy stem and carrying flowers with a trilobed lip. Bloom time: often Fall. Flower duration: up to one month.

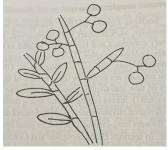


SECTION Stuposa Kraenzl. 1910 – Dendrobium stuposum

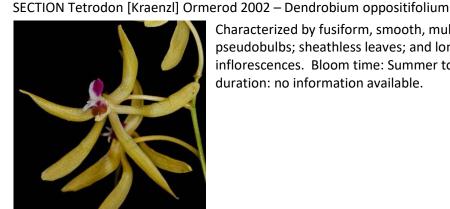
5 Species, India – Southeast Asia - China



Characterized by the tall, more or less pendulous stems that are slightly swollen, that blooms on a few, short, terminal, on leafless stems carrying relatively small flowers with a 3 lobed lip and hairy margins. Bloom time: Spring. Flower duration: about one week.



1 Species, New Caledonia



Characterized by fusiform, smooth, multi-internode pseudobulbs; sheathless leaves; and long, lateral inflorescences. Bloom time: Summer to autumn. Flower duration: no information available.

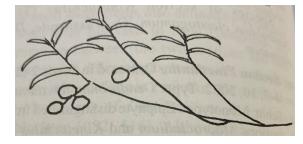


SECTION Winkia [Clem & Jones & Molloy] H P Wood 2006 – Dendrobium cunninghamii

1 Species, New Zealand



Characterized by being in New Zealand usually as an epiphyte but sometimes as a lithophyte with a bushy habit, ribbon-like leaves and several few flowered inflorescence. Bloom time: Summer. Flower duration: no information available.



NOTE: The number of species per group is from www.orchidspecies.com and the sum of all these species is 1009 species. In the summary on www.orchidspecies.com it is stated that there are over 1200 Dendrobiou species.

The total of species listed in OrchidWiz X6.2 update March 2020 is 1688 Species. This includes 55 natural hybrids resulting in 1633 Species in OrchidWiz. I am aware from prior research that the OrchidWiz listing includes synonyms and this has been confirm for a few of the species listed in OrchidWiz.

Kew has the definitive list of accepted and up to date dendrobium species, but it is NOT easy to sort out the accepted names from the synonyms.

With these comments I am NOT confident that the list of number of species per section above is correct, but it is the best that I have access to at this time.

Table of species, top 12 progeny and 10 awards (OrchidWiz – Mar 2020 update)

				Progeny	AOS Awards										
Kew Name	<u>Section</u>	<u>Temperature</u>	Season	F1/Total	FCC	<u>AM</u>	нсс	<u>JC</u>	AD	<u>AQ</u>	CCE	ССМ	СНМ	CBR	<u>Total</u>
Dendrobium anosmum	Dendrobium	Warm to Hot	Spring	47/79	2	5	1	4			1	23		1	37
Dendrobium bigibbum*	Phalaenanthe	Warm to Hot	Fall	633/7850		17	16	2				10			45
Dendrobium canaliculatum	Spatulata	Warm to Hot	Spring	214/623		2	3					5		1	11
Dendrobium chrysotoxum	Densiflora	Cool to Warm	Spring	35/44		11	8					18			37
Dendrobium cuthbertsonii	Calyptrochilus	Cold	Yearround	14/19	2	49	25	6			4	23	2		111
Dendrobium discolor	Spatulata	Warm to Hot	Yearround	150/3674		3	2				1	5			11
Dendrobium gouldii	Spatulata	Hot	Spring-Summer	175/3260		2	2	1			1	4	1		11
Dendrobium kingianum	Dendrocoryne	Cool to Warm	Winter-Spring	122/1329	3	20	11	3			3	17	3	1	61
Dendrobium lasianthera	Spatulata	Warm to Hot	Yearround	225/974		9	4						1		14
Dendrobium lindleyi	Densiflora	Cool to Warm	Spring	7/10		10	7				4	28			49
Dendrobium lineale	Spatulata	Warm to Hot	Yearround	134/2905			1				3	6		1	11
Dendrobium nobile	Dendrobium	Cool to Warm	Winter-Spring	99/2603		2	2				3	30	1	1	39
Dendrobium schulleri	Spatulata	Hot	Spring	111/2845		2						1			3
Dendrobium speciosum	Dendrocoryne	Cool to Warm	Winter-Spring	255/1154		5	7	1			2	12	1		28
Dendrobium spectabile	Latouria	Warm to Hot	Winter-Spring	24/25		14	4	1			2	11	2	1	11
Dendrobium stratiotes	Spatulata	Hot	Spring-Summer	139/3883		7	3							1	11
Dendrobium taurinum	Spatulata	Hot	Spring-Fall	151/5157											0
Dendrobium tetragonum	Dendrocoryne	Cool to Warm	Winter-Spring	70/1352		3	5	1					7	1	17
Dendrobium victoriae-reginae		l.	Spring-Summer	25/49	1	12	9	2			3	5		1	33

Key: Cold - 50 to 58F at night; Cold to cool - 50 to 66F at night; Cool - 58 to 66F at night; Cool to warm - 58 to 75F at night; Cool to Hot - 58 to 85F at night; Warm - 66 to 75F at night; Warm to Hot - 66 to 85F at night; Hot - 75 to 85F at night

There has been one intergeneric cross. It was made between the genus Dendrobium and Bulbophyllum in 2006. There are no photos, awards, or additional breeding made with the cross.

Within the Dendrobium family there tends to breeding in families with various amount of breed outside of the families. The families, the degree of breeding outside the section is discussed, and rough number of progeny is provided:

Section Phalaenanthe (referred to in this report as the Bigibbum Family) – Dominated by Den. bigibbum (aka. Den phalaenopsis), 633 F1 and 7850 total progeny. The second most used species is Den. affine with 77 F1 and 772 total progeny. Looking at the first 17 unique primary F1 progeny (associated F1 progeny from 146 to 6) the most crosses were made with the Spatulata Family (14 crosses) followed by Dendrocoryne (2 crosses) and a single cross with the Latouria Families. There are probably over 8,500 associated with the Bigibbum species. Select hybrids:

Den. bigibbum Family:



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



Den. Jaquelyn Thomas 'Orquivalle' JC/AOS Nov 2016, NS 7.0 x 4.5 cm



Den. Hickam Deb 'Nancy' AM/AOS Oct 1984, NS 8.2 cm



Den. Eboni Purple 'Splash' AM/AOS Oct 2018, NS 5.9 x 6.0 cm



Den. Hawaii Strpes 'Nora' FCC/AOS Jan 2016, NS 9.0 x 7.0 cm

Den. affine Family (not included pictured in Bigibbum Family above):



Den. Baby Pink



Den. Chao Praya Gem



Den. Kuranda Classic 'Joyce Suzuki' AM/AOS



Den. Tanamera Beauty 'Hallie' AM/AOC



Den. Alick Dockrill 'Samantha Joy' AM/AOC Oct 1997, NS 8.0 x 7.5 cm May 2014, NS 8.3x7.6 cm Apr 2000, NS 6.5 x 7.8 cm

Section Spatulata – The Bigibbum Family may be the Family with the species with the most progeny, but the Spatulata Family has 7 of the top 10 Dendrobium species with the most F1 progeny and I suspect the most intersectional crosses. Most of the intersectional crosses (~100 crosses, top 6 Spatulata species with two or more progeny) have been with the

Bigibbum Family. Three crosses were identified with other Sections, 2 crosses made with the Densiflora Section and one with Latouria Section. See table above for information on the top 8 species. Select hybrids (pictures not included in Phalaenanthe Section above):



Den. Black Spider



Den. Touch of Gold 'Fco Valentina' AM/AOS



Den. Caesar 'Pink' AM/AOS



Den. Cherub 'Kay' AM/AOC Jul 2019, NS 4.2 x 3.3 cm | Sep 2011, NS 7.3 x 7.5 cm | Jan 2008, NS 3.7 x 4.2 cm | Dec 2010, NS 3.5 x 7.1 cm |



Den. Samarai 'Caribe' HCC/AOS

Section Densiflora - Consist of 14 species, 9 have been used in crosses. Den. chrysotoxum has the most progeny (both F1 and total) with 45 total progeny, Den. farmeri and Den. thyrsiflorum are second with 19 total progeny, the remaining species have 10 or less total progeny. Very little breeding has been done with this VERY showy dominate yellow flower section. Five to six crosses have been made with the following section: Bigibbum family, Nobile Family, and Holochrysa section. The other six sections have three or less crosses. Select hybrids:



Den. Gatton Sunray 'Jardin botanique de Montréal' AM/AOS May2013, NS 11.1x8.2 cm Nov 1998, NS 5.0 x 3.8 cm Oct 2018, NS 5.2 x 4.3 cm



Den. Floralia 'Jenkins' HCC/OSCOV



Den. Chet's Choice 'Cascade' AM/AOC



Den. Mousmee 'Fame' HCC/AOC Oct 1990, NS 5.3 x 3.8 cm



Den.Farmeri-Thyrsiflorum 'Micklow's Springdale' AM/AOS Apr 1984, NS 5.2 cm

Section Formosae – There has been significant breeding (~ 58 intra-sectional crosses and over 400 total progeny) within the section, but little breeding outside of this section (~ 20 crosses between 10 sections 3 section with three crosses). I suspect the lack of intersectional breeding is due to either lack of interest, success, or results are not in (recent crosses). The top 4 breeding species are (in order of total progeny, format Den. Name (F1 / Total progeny)): Den. formosum (46/124), Den. cruentum (36/88), Den. infundibulum (18/46), Den. sanderae (13/36). The crosses tend to be shades of white with a colored lip, select hybrids:



Den. Frosty Dawn 'Yen' AM/AOS Dec 2017, NS 8.0 x 7.2 cm



Den. Formidible 'Ugusu' HCC/AOS May 1993, NS 11.5 cm



Den. Dawn Maree 'Old Mill' AM/AOS May 1992, NS 7.9x7.2 cm



Den. Fire Coral 'Super Star' AM/AOS Mar 1992, NS 8.9x8.5 cm



Den. Thomas Warne 'H&R' AM/AOS Mar 2019, NS 9.0x8.6 cm

Nobile, Section Dendrobium – The Section Dendrobium is dominated by Nobile Family breeding. The breeding has been primarily within the section. I have found intersectional breeding with 8 other sections for a total of 37 crosses. The primary intersectional breeding has been with the sections Densiflora (more flowers per inflorescences, color, and warmer growing conditios ??) and Breviflores (miniature nobile types ??). Was not able to find any intersectional breeding information. Select hybrids of the non-nobile hybrids in the Dendrobium section:



Den. Adastra 'crestwood' HCC/AOS Apr 1979, NS 7.5 cm



Den. Nestor 'Laura' AM/CCM/AOS Apr 2019, NS 7.2 x 5.3 cm



Den. Bohemian Rhapsody 'Makawao Gem' AM/AOS Mar 2018, NS 5.4x4.2 cm



Den. Rainbow Dance 'Akone' HCC/AM/AOS Nov 2007, NS 5.4x5.7 cm



Den. Stardust 'Stephen Tobiassen' AM/CCE/AOS Jan 2014, NS 6.5x5.3 cm

The Nobile Family is dominated by 8 species (in order of total progeny, format Den. Name (F1 / Total progeny)): Den. nobile (99/2609), Den. heterocarpum (33/2531), Den. signatum (25/2419), Den. findlayanum (20/2277), Den. moniliforme (83/2061), Den. regium (12/1901), Den. linawianum (16/1790), Den. pendulum (5/1754). An interesting observation is that in the past five years Den. nobile type Dendrobiums have averaged around 3 to 4 AOS awards per year. Select hybrids:



Den. Pink Doll 'Magic' AM/AOC Sep 1998, NS 8.3 x 7.0 cm



Den. Yukidaruma 'King' AM/CCE/AOS



Den. Star Sapphire 'KOS' AM/AOS Mar 1977, NS 7.0x6.3 cm | Feb 2001, NS 8.5 x 7.5 cm | Mar 2016, NS 7.3x5.8 cm



Den. Cloud's Snow Bunny 'Memoria Eileen Rickman' AM/AOS



Den. Maui Sunshine 'Jack's Sweetheart' AM/AOS Mar 2012, NS 4.6x4.2 cm

Latouria – Flowers in the Latouria section are known for flower life, in most cases 3 to 4 months, and this trait is passed on to its progeny. Of the 52 species in the group, 29 have progeny with the top 4 species in regards to total progeny being (in order of total progeny, format Den. Name (F1 / Total progeny)): Den. bifalce (18/359) the key species in the introduction of stripped Dendrobiums, Den. atroviolaceum (47/267) which includes the 'miniature' version Den. normanbyense, Den. macrophyllum (41/228), Den. convolutum (27/91), Den. johnsoniae (33/84). Beside Den. bifalce there has been significant intersectional breeding with the Latouria section and three other sections:

Spatulata Section with 32 Primary crosses, Bigibbum Family 17 primary

crosses, and Dendrocorvne Section with 8 primary crosses. Select hybrids:



Den. Roy Tokunaga 'Majestic' AM/AOS



Den. New Guinea 'Miwa' CCM/AOS May 2019, NS 9.3 x 5.7 cm Mar 1992, NS 9.0x4.0 cm



Den. Hawaii Stripes 'Nora' FCC/AOS Jan 2016, NS 9.0x7.0 cm



Den. Gerald McCraith 'Broadway' AM/OCNZ Jan 2016, NS 5.5x6.0 cm



Den. Violet Yamaji 'Puanani' AM/AOS Mar 2018, NS 7.5x7.0 cm

Australian Dendrobiums, which consist of two section, have a relatively small but quickly expanding following. Besides two fact that both have a center of distribution in Australia, the plants tend to be very floriferous bloomers making them ideal specimen plants. Some of the differences between the two sections is plant habitat (Dendrocoryne upright ovoidal

pseudobulbs; Rhizobium pendulous stems) and floral shape (although some Rhizobium species flowers do have a floral structure similar to Dendrocoryne). From a breeding point of view, the

Dendrocoryne Section has the most progeny (~2000-3000 grexes) and has

been crossed with 12 other sections, while the Rhizobium Section has around 300 to 400 grexes and intersectional breeding has only been with Dendrocoryne Section.

> **Dendrocoryne Section** - Consist of 14 species and at least 3 natural



Den. Australian Artist 'Ellie Louise' HCC/AOC



Den. Avril's Gold 'Mitchell' AM/AOC Sep 2015, NS 3.0x3.0 cm Aug 2013, NS 5.3 x 7.4 cm



Den. Kayla Mar 2019, NS 5.0x6.0 cm



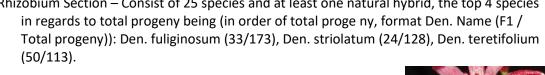
Den. Hilda Poxon 'Mem. Roy Fox' AM/AOS | 'Diamond Orchids' AM/AOS Mar 1992, NS 9.0x4.0 cm

hybrids, the top 4 species in regards to total progeny being (in order of total progeny, format Den. Name (F1 / Total progeny)): Den. tetragonum (70/1406), Den. kingianum (122/1371), Den. speciosum (260/1206), Den. fleckeri (26/1031). Select hybrids (right and above):

Den. Bardo Rose 'Gary Edwin' AM/AOS Apr 2006, NS 3.3 x 3.0 cm



Rhizobium Section – Consist of 25 species and at least one natural hybrid, the top 4 species in regards to total progeny being (in order of total proge ny, format Den. Name (F1 / Total progeny)): Den. fuliginosum (33/173), Den. striolatum (24/128), Den. teretifolium (50/113).





Den. Tweetas 'Red Lips' AM/AOC Jul 2010, NS 4.0 x 2.6 cm



Den. Grey Ghost 'Wamberal' AM/AOS Feb 2009, NS 4.1 x 3.1 cm



Den. Oliver Jack 'Gerard' FCC/AOC Oct 2015, NS 3.6 x 2.8 cm



Den. Hot Coals 'Cheryl' HCC/AOC Aug 2012, NS 3.4 x 2.8 cm



Den. Australian Ginger 'Kobie' AM/AOC Aug 2015, NS 4.6 x 4.0 cm

Remaining Sections / species – The remaining sections consist approximately 700 more species and hybrids. Some off

the section grexs are: Den. victoriae-reginae (25/61), Den. cuthertsonii (14/19), Den. pulchellum

(23/51), and Den. aduncum (3/128). Select hybrids below:



Den. Gatton Sunray 'Jardin botanique de Montréal' AM/AOS



Den. Kuniko 'Grahame' AM/AOC



Den. Jiali Mikotae 'FY-L' AM/AOS May2013, NS 11.1x8.2 cm Oct 2012, NS 0.5? x 0.6? cm Mar 2015, NS 1.8 x 1.7 cm Nov 2007, NS 5.4x5.7 cm



Den. Rainbow Dance 'Akone' HCC/AM/AOS



Den. Mountain Magic 'Mountain's Real Super' AM/AOC Jun 2001, NS 3.4 x 4.0 cm

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AOS Bulletin, Review of the "Antelope" Dendrobiums, Ossian, C. R.; Vol. 50/51, Oct-1981 to April-1982

Dendrobium Section Phalaenanthe Schlechter, Die Orchid. Due. Nue Guinea (1912)

Type: Dendrobium [Den.] bigibbum [den-DROH-bee-um bye-JIB-bum]

This section of three species (OrchidWiz [update Jun 2020]) may be small in number but has the most used species of the genus Dendrobium. The plants are small to large epiphytic or less commonly lithophytic plants that are spread throughout tropical northwestern Australia, Papua and New Guinea, and intermediate islands at elevations below 500 m.. They require excellent drainage, high humidity, bright to moderate light, and ample water while in growth and with a distinct dry season. Characterized by the short to long compact stems / canes carrying leaves towards the apex. The blooms occur on long, arching inflorescence carrying large, showy, wide opening, long lasting, purple, pink or white flowers with petals and sepals that are larger than the lip. The mentum (a chin-like projection usually out the back of the plant that consist of the column foot and the bases of the lateral sepals and lip) usually has 2 chins, S-shaped. A Phalaenanthe species table is proved below

Common Name or Meaning – derives its name from the Greek word "phaliana" (moth) and "anthos" (flower)

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

Generally, you would point scale using the Dendrobium point scale.

Table of species, (www.orchidspecies.com - Jul 2020 update)

					Progeny	rogeny Awds AOS Awai								rds				
<u>Name</u>	Year	Synonyms	Country	Climate	F1/Total		FCC	<u>AM</u>	HCC	JC	AD	AQ	CCE	ССМ	СНМ	CBR	Total	
Dendrobium affine	1840		Seram and Lanimpar Northern	Warm to Hot	77/772	8		1	1						1	1	4	
Dendrobium bigibbum var. bigibbum	2015	Den. bigibbum, Den. sumneri, Den. phalaenopsis var. statterianum	Northern half Cape York, Australia, Islands of Torres Strait, Southern Papua New Guinea	Warm to Hot				1	1								2	
Dendrobium bigibbum var. superbum	2015	Den. phalaenopsis, and varietal forms NOT mentioned above and below.	Cape York, Australia - Cooktown	Warm to Hot	633/7906	111		16	14	1				8			39	
Dendrobium bigibbum var. compactum	2015	Den. phalaenopsis var. compactum	Cape York, Australia - Just North of Cairns, Hartleys Creek	Warm to Hot					1	1				2			4	
Dendrobium dicuphum	1874		Northern Australia					Now	<i>I</i> Den	br	obiı	ım a	affin	е				
Dendrobium lithocola	1989		Cape York, Australia			Now	Den	orobi	um k	oigi	ibbι	ım v	/ar. c	omp	actum			
Dendrobium striaenopsis	1989		Laret Island, Tanimbar Group, Indonesia		Now Denbrobium bigibbum var. superbum													
Dendrobium x superbiens	1876		Queensland, Australia	Warm to Hot	52/3276	5								1			1	
Dendrobium williamsianum	1878		Papua New Guinea	Hot	39/76	1										1	1	

Key: Cold - 50 to 58F at night; Cool + 50 to 66F at night; Cool + 58 to 66F at n

This section has long been in a state of confusion, centered on 'Den. Bigibbum / Den. Phalaenopsis' family. I believe a recent study by Peter Adams (2012) may have cleared up this confusion. A summary of his results was provided by Laura Bonnell (2018) and the comparison table below was generated from her paper, highlighted characteristics I believe are significant.

Dendrobium bigibbum varieties												
<u>Characteristics</u>	<u>bigibbum</u>	<u>superbum</u>	<u>compactum</u>									
Physical location	York, north from the Archer River (Aurukun, west coast of Cape York) and the Iron Range (east coast of Cape York), the islands of Torres	from Cooktown in the east to the Font Hills west of Mount Molloy, Queensland. It also grows as far north as Princess Charlotte Bay. Rapidly recolonize disturbed sites.	small area just north of Cairns, Australia									
Climate conditions, elevation	low elevation from sea level	Up to 1,300 feet (400 m). In areas with a hot climate and extremely seasonal rainfall.	This area gets a little more rain in the winter, but there is still a rather drier period in the winter and spring.									
Climate conditions,	moderate light		Clift face eastern side									
Climate conditions, habitat	vegetation, and monsoon thickets"	Grows on trees and rocks in coastal scrub, littoral rainforest, riverine vegetation, monsoon thickets, swamps, and gullies in open forests. It also grows in vegetation near beaches	Grows almost exclusively on rocks									
Pseudobulbs	to 48 inches (120 cm) long, most often about 16–24 inches (40–60 cm). Usually about 0.4 inches (1.0 cm)	48 inches (40–122 cm) long. Pseudobulbs have 3 to 12 leaves that are produced in two rows on the upper third of the stem. They often have	Can reach 20 inches (50 cm) high; the average is 4–4.7 inches (10–12 cm) high. They are leafy in the upper third and each pseudobulb has only three to five green leaves									
Leaves	and about 0.8 inches (2 cm) wide. They often have a purplish tinge	and about 1.2 inches (3.5 cm) wide. They often have purplish margins										
Inflorescences Flower count	near the end of both old and new canes, and these canes may or may not have leaves. It is possible for a cane to have several inflorescences at the same time.	Arched inflorescences can grow from 8 to 12 inches (20–40 cm) long 2 to 20 flowers	Inflorescences are 4–12 inches (10–30cm) long 1 to 8 flowers									

Flower color	lilac-purple, occasionally	lilac purple, occasionally	Usually lilac-purple, but can
	white, faintly blue or faintly	white, faintly blue or faintly	be white, faintly blue or
	pink and usually (80%) have a	pink. Unlike Den. bigibbum	faintly pink. There is no white
	prominent white spot on the	var. bigibbum, there is	spot on the labellum.
	labellum	(usually) no white spot on the	
		darker purple lip	
Flower size	1.2 inches (3.0 cm) wide by 2	Slightly larger, 1.4–2.8 inches	The flowers are similar to
	inches (5.0 cm) high.	(3.5–7 cm)	those of Den. Bigibbum var.
			superbum, but with a much
			shorter inflorescence
Flower structure	Petals large and usually	Sepals are similar in length to	The sepals are narrow, while
	overlap	the petals. Petals are very	the petals are as broad as
		broad.	they are long
Blooming season	Usually March thru July in the	Usually March thru July in the	In the Southern Hemisphere,
	Southern Hemisphere	Southern Hemisphere	flowering occurs between
	(autumn to winter), but	(autumn to winter).	January and October, peaking
	plants have been known to		from March to July (autumn
	flower as early as January or		to winter)
	as late as October		
Flower life	Flowers last about a month	Flowers last about a month	Flowers last about a month

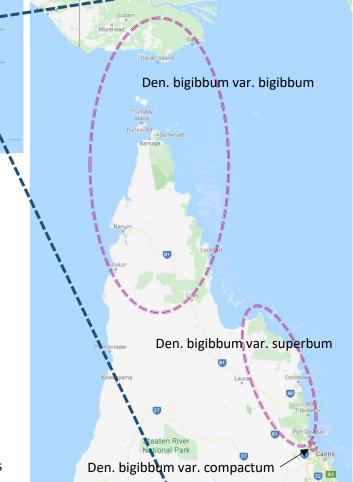
A little more detail, graphical information, on the species distribution is provided in the figure below.

Differences between the species (b, var. Bigibbum; s, var. superbum; c, var. compactum):

- Distribution Cape York Peninsula
 - b Northern half into Papua New Guinea
 - s East Coast
 - c Hartley Creek area

Climate Conditions, habitat – trees and rocks, coastal scrub

- s Maybe more salt tolerant
- c Grows almost exclusively on rocks
- Pseudobulbs
 - b & s Up to 48 inches (120 cm) long, most often about 16–24 inches (40–60 cm)
 - c Can reach 20 inches (50 cm) high; the average is 4–4.7 inches (10–12 cm) high
- Leaves
 - b 3–6 inches (8–15 cm) long and about 0.8 inches (2 cm) wide. They often have a purplish tinge
 - s 4–6 inches (10–15 cm) long and about 1.2 inches (3.5 cm) wide. They often have purplish margins
 - c 4.7 inches (12 cm) long and an inch (2.5 cm) wide. Leaves are green.



- Inflorescences
 - b & s 8 to 16 inches (20-40 cm) long
 - c 4-12 inches (10-30cm) long
- Flower count
 - b & s 2 to 20 flowers
 - c 1 to 8 flowers
- Flower color
 - b Approximately 80% of the population have a prominent white spot on the labellum
 - s Usually no white spot on the darker purple lip
 - c There is no white spot on the labellum.
- Flower size
 - b 1.2 inches (3.0 cm) wide by 2 inches (5.0 cm) high.
 - s & c Slightly larger, 1.4–2.8 inches (3.5–7 cm)
- Flower structure
 - b Petals large and usually overlap
 - s Sepals are similar in length to the petals. Petals are very broad.
 - c The sepals are narrow, while the petals are as broad as they are long

Hyrbridization:

This section is dominated by Den. bigibbum (aka. Den phalaenopsis), 633 F1 and 7850 total progeny. The second most used species in this section is Den. affine with 77 F1 and 772 total progeny. A table of all three species and the natural hybrid, broken down by decade is shown below.

<u>bigibbum</u>	1880	<u>1890</u>	<u>1900</u>	<u>1910</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>	<u>2020</u>	<u>Total</u>
Reg	0	2	0	0	1	14	34	461	670	750	1722	1496	1358	1342	56	7906
Assc Awds	0	0	0	0	0	13	48	160	205	162	319	424	293	230	0	1854
affine																
F1	0	0	0	0	0	0	0	2	11	16	109	235	164	233	2	772
AA	0	0	0	0	0	0	0	0	2	2	26	56	17	15	0	118
williamianum																
F2	0	0	0	0	0	0	0	0	15	17	19	8	6	11	0	76
AA	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5
x superbiens																
F3	0	1	0	0	1	2	11	121	255	309	722	629	623	585	15	3274
AA	0	0	0	0	5	5	0	27	85	56	129	161	134	64	0	666
<u>Total</u>																
Reg	0	3	0	0	2	16	45	584	951	1092	2572	2368	2151	2171	73	12028
Assc Awds	0	0	0	0	5	18	48	187	292	220	474	646	444	309	0	2643

From the above table one can see that although the first crosses were made in was made in 1893 then quickly dropped and then started again in 1926 and then exploded from 1950 till today. The peak in registering crosses occurred in 1980s with a corresponding peak occurring in associated awards in the 1990s.

Looking at Den. Bigibbum progeny with first most 17 unique primary, F1, progeny (associated F1 progeny from 146 to 6) the most crosses were made with the Spatulata Family (14 crosses) followed by Dendrocoryne (2 crosses) and a single cross with the Latouria Family.

There are probably over 8,500 associated with the Bigibbum species. Select hybrids:Den. bigibbum Family:



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



Den. Jaquelyn Thomas 'Orquivalle' JC/AOS Nov 2016, NS 7.0 x 4.5 cm



Den. Hickam Deb 'Nancy' AM/AOS Oct 1984, NS 8.2 cm



Den. Eboni Purple 'Splash' AM/AOS Oct 2018, NS 5.9 x 6.0 cm Jan 2016, NS 9.0 x 7.0 cm



Den. Hawaii Strpes 'Nora' FCC/AOS

Den. affine Family (not included pictured in Bigibbum Family above):



Den. Baby Pink



Den. Chao Praya Gem



Den. Kuranda Classic 'Joyce Suzuki' AM/AOS Oct 1997, NS 8.0 x 7.5 cm



Den. Tanamera Beauty 'Hallie' AM/AOC May 2014, NS 8.3x7.6 cm



Den. Alick Dockrill 'Samantha Joy' AM/AOC Apr 2000, NS 6.5 x 7.8 cm

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Award Descriptions (Jul 2020)

Dendrobium Pauline – Quality Award Description

(Den. phalaenopsis x Den. discolor)

Twenty-three open flowers on a gracefully arched inflorescence; sepals and petals white, lightly overlaid rose purple, margins slightly undulated; sepals white picotee, lateral sepals arched, overlay tending to no overly basally; petals heavier overlaid centrally, slightly spatulate; lip tri-lobe, mid lobe white, lightly overlaid rose purple, side lobes and central area sepia, mid-lobe lancelet, side lobes almost enclose the column; column sepia

overlaid rose purple distally, anther cap cream; substance firm; texture diamond-dust.

Dendrobium Chao Praya Gem – Quality Award Description

(Den. Madame Thong-In x Den. Pinky)

Sixty-three almost full flowers and three buds on three inflorescences; flowers white, heavily overlaid rose purple basally, sepals lanceolate, petals spatulate, dorsal sepal and petals recurved; lip white heavily overlaid rose purple basal half, tending to encircle the column; column white, overlaid rose purple basally, anther cap white; substance firm; texture matte.



Dendrobium Rakpaibulsombat – Cultural Award Description

(Den. Margaret Joan Fell x Den. phalaenopsis)

Six hundred thirtyfour slightly reflexed white flowers and 48 buds on 21 inflorescences; an extremely well-balanced plant, 37 cm wide by 28 cm high, grown in a 15-cm square basket, foliage clean, blemish-free, numerous keikeis in flower; dorsal sepal and petals slightly reflexed; lip ovulate, enclose column; column and anther cap white; substance firm; texture matte.



Dendrobium Black Spider – Quality Award

Description

(Den. gouldii x Den. Halawa Beauty)

Twenty-two flowers and one bud well arranged on one 52-cm inflorescence; sepals dark purple-mahogany, basaly bright yellow, dorsal slightly twisted, lateral sepals fully twisted, recurved; petals very dark mahogany, basally bright yellow, slightly spatulate, flat; lip purple-mahogany, midlobe overlaid dark purple-mahogany distally; column yellow, anther cap light yellow; substance firm; texture waxy.



Dendrobium Susilo Bambang Yudhoyone – Quality Award Description

(Den. Pikul Tuck Soon x Den. Adele William)

Sixteen cupped, slightly twisted, margins undulated open flowers on one staked, 31-cm inflorescence; sepals and petals white; lip white, overlaid heavily purple, midlobe overlaid lightly distally, open; column and anther cap white; substance firm; texture matte.