
The genus Dendrobium

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First published October 2018



THE SPECIES ORCHID
SOCIETY OF WA

The Genus *Dendrobium* (part 1)

The genus was originally identified and named by Olaf Swartz in 1799; however, there were two earlier names *Ceraia* Lour. and *Callista* Lour. Therefore, the genus name *Dendrobium* is a conserved name as it has replaced the earlier names. The type species is *Dendrobium moniliforme* (L.) Sw. from Japan, Korea, China and Taiwan, originally described by Linnaeus in 1753 as *Epidendrum moniliforme*. The root of the genus name *Dendrobium* is dendro = tree and bios = life. The species in this genus are generally light loving, and many instances, grow either high in the forest canopy or in relatively unprotected locations where they are exposed to high light.

Dendrobium and its relatives can be found from India and Sri Lanka to Tahiti, from Japan and Korea to Stewart Island (South of the South Island on New Zealand). The majority of orchids in the genus *Dendrobium* are epiphytic; however there are some members that are lithophytic or terrestrial. They range in size from miniature to very large (up to 5m tall), grow in climatic conditions from semi-desert to hot wet rainforest, from sea level to 3,800 m in the high central mountain ranges of Papua New Guinea. They can be found on fringing coral beaches, primary tall rainforest, mangrove forests, in cultivated rubber and coconut plantations, roadside cuttings, rocky cliff faces and rocky outcrops, stunted coastal scrubland, paperbarks in swampy forests and city trees. These incredible orchids are highly adaptable, are an important commercial product and for many of us, were our first experience of orchids when we were given a flower arrangement containing 'Singapore orchids'.

Dendrobieae is in the subfamily *Epidendroideae* of the family *Orchidaceae*. The subtribe, *Dendrobiinae* contains the species that we know as *Dendrobium*, while the other sub-tribe *Bulbophyllinae*, the *Bulbophyllum*. This classification, proposed by Dressler 1993 has been used as the basis for this article.

Dendrobium contains about 1000 species, although this varies as taxonomists discover and identify new species, or revisit past identification and reduce species to synonymy. Baker and Baker (1996) found over 2400 valid names for *Dendrobium* species.

The genus *Dendrobium* is divided into six (6) main sections: *Callista*, *Dendrobium*, *Formosae*, *Latouria*, *Phalaenanthe*, and *Spatulata*. Schlechter (1982) classified *Dendrobium* into 41 sections, however for simplicity this article will focus on the foregoing accepted higher level sections and some of the more common members of each; identify their specific characteristics, habitat, cultural requirements and the relative ease or challenges to grow and flowering them.

While now relatively common in cultivation, and in the literally thousands of hybrids, *Dendrobium* orchids are increasingly becoming threatened in the wild as habitat is destroyed for farming and plantation purposes, logging (both legal and illegal) and population expansion. Many members of this genus come from highly populated regions of mainland and island Asia where the need to house their citizens imposes heavily on governments. Currently, 31 (thirty one) species are listed as threatened on the IUCN redlist, with three species *Dendrobium huoshanense*, *Dendrobium officinale*, and *Dendrobium schutzei* shown as critically endangered. Another 8 (eight) are listed as endangered.

Section *Callista*

Approximately ten (10) species are described in section *Callista*. However, as earlier noted, there are many synonyms for the species in this section, one of most popular in cultivation in the genus due to their showy flowers. In this section, we find:

Dendrobium chrysotoxum
Dendrobium densiflorum
Dendrobium farmeri
Dendrobium harveyanum
Dendrobium jenkinsi
Dendrobium lindleyi
Dendrobium palpebrae
Dendrobium sulcatum, and
Dendrobium thyrsoiflorum.

Dendrobium chrysotoxum Lindley 1847 (*SECTION Densiflora*) is a smaller-sized, cool to warm growing epiphyte on deciduous trees that lose much of their canopy during winter. This species comes from Myanmar, Laos, Thailand, Vietnam, China, Himalayas, Bangladesh and India at moderate elevations 400-1,600m. Its common name in Thailand is the Golden Bow orchid. It has clustered, grooved, clavate or fusiform, up to 30 cm, many angled, apically thickened pseudobulbs that can be enveloped by many white, membranous sheaths (a common feature of many members of the genus) with 2 to 3 oblong to lanceolate, coriaceous, acute leaves. Flowering takes place in winter through spring with an up to 30cm inflorescence that arises from nodes near the apex of the pseudobulb. It is lax (loose, not tightly clustered) and pendulous. The flowers are short-lived, but highly fragrant, with the fragrance said to be honey-like.



Photo source:
<https://www.youtube.com/watch?v=IQAcacbQ8oY>

Synonyms in use are *Callista chrysotoxa* (Lindl.) Brieger 1981; *Callista chrysotoxa* (Lindl.) Kuntze 1891; *Callista suavissima* Kuntze 1891; *Dendrobium chrysotoxum* var. *suavissimum* (Rchb.f.) A.H. Kent 1888; *Dendrobium suavissimum* Rchb.f 1874

Dendrobium densiflorum Lindl. ex Wall. 1829, (*SECTION Densiflora*) is the type species for this *SECTION* and is commonly named the densely-flowered *Dendrobium* is found in Assam, Bangladesh, eastern Himalayas, Nepal, Myanmar, Thailand, Laos, Vietnam, Tibet, Hainan and southern China. It is a small to medium sized, cool growing epiphyte or occasional lithophyte on moss covered trunks or branches at altitudes 1,100 to 1,800m. Its habitat has distinct seasonal variation between the hot, wet and humid summer and the cooler, drier winter. Vegetatively similar to *Dendrobium chrysotoxum*, it has erect, tufted, 7 to 12 noded, obscurely 4 angled, fusiform or clavate, 30 cm long stems with each node half covered by a white sheath and carrying 3 to 5, towards the apex, elliptic or ovate, persistent, acute leaves. This species blooms from the late winter through spring with pendant, 20 cm, cylindrical, densely flowered racemes with scented, short-lived flowers arising from nodes at or near the apex of the pseudobulb. The in-situ photo

clearly demonstrates the tight-bunched flower raceme that is typical of this species.



Photo source:
<https://biodiversity.bt/observation/show/61301>

Synonyms in use are *Callista densiflora* (Lindl. ex Wall.) Kuntze 1891; *Callista densiflora* (Wall.)

Brieger 1981; *Dendrobium clavatum* Wall. 1828; *Dendrobium densiflorum* f. *parviflorum* Regel 1874; *Dendrobium schroederi* Dombrain 1870; *Endeisa flava* Raf. 1837; *Epidendrum dumunsuttu* Buch.-Ham. ex Lindl. 1830

Dendrobium farmeri Paxton 1849 (*SECTION Densiflora*) Section is the best known and most frequently present in orchid collections. Found in the eastern Himalayas, Assam, Nepal, Myanmar, Thailand, Laos and Malaysia as an epiphyte in evergreen lowland forests and primary montane forests at 150 to 1,000 meters, its common name is Farmer's Dendrobium (named after the English Supervisor of the Calcutta Botanical Garden in the 1800's), this pendulous, hot to warm growing epiphyte has clavate or fusiform, 4 angled above stems carrying 2 to 4, towards the apex, coriaceous, ovate-lanceolate, acute or acuminate leaves. Flowering occurs in spring on 20cm, pendent, many densely flowered, cylindrical racemose inflorescences that arise from the nodes near the apex of leafless and leafed canes. Unfortunately, the flowers are short-lived, lasting for only a week or so.



Photo source: <http://www.rv-orchidworks.com/orchidtalk/cattleyas-vandas-dendrobiums-bloom/38006-dendrobium-farmeri.html>

Its habitat consists primarily of primary forest tall trees, often adjacent to waterways and streams. This species prefers some shading, and the climate features frequent heavy summer rainfall with a dry, cooler winter. White, pink and white and yellow flower colour forms are known.



Photo source: <https://www.lelong.com.my/dendrobium-farmeri-pink-adathreestore-F395998-2007-01-Sale-I.htm>

Photo source: <https://www.orchidforum.com/threads/dendrobium-farmeri-yellow-form.11772/>



Dendrobium farmeri is very similar to *Dendrobium palpebrae* that can be found in the same habitats. Laverack et al (2000) say that the two species can be distinguished by the violet tinge to the flowers of *Dendrobium farmeri* that is not present in *Dendrobium palpebrae*.

Synonyms in use are *Callista densiflora* (Lindl. ex Wall.) Kuntze var *farmeri* 1891; *Callista farmeri* (Paxton) Kuntze 1891; *Dendrobium densiflorum* var *farmerii* (Paxton) Regel 1874; *Dendrobium farmeri* var. *albiflorum* C. Morren 1860; *Dendrobium farmeri* var. *aureoflavum* Hook.f. 1864

Dendrobium harveyanum Rchb.f. 1883 (SECTION *Densiflora*) is rare in collections, and is found in Yunnan province in China, and Myanmar, Thailand and Vietnam. Rare in collections, this species is a small sized, cool growing epiphyte on tree trunks and large branches at 1,100 – 1,700m. Commonly known as Harvey's Dendrobium, an Irish orchid enthusiast from the 1800's who was first to flower species, it is also known in China as Su Ban Shi Hu, and in Thailand as Ueang Kham Foi. It has erect, spindle-shaped, deeply sulcate stems with several apical, deciduous, ovate-oblong, leathery leaves. Flowering in late winter-early spring, it has a pendant, 15cm few to several flowered, racemose, lax inflorescence that arises from the nodes near the apex of older leafless canes with two-nine, fragrant honey-scented flowers. The distinctive golden-yellow flowers with long filaments edging the petals, while the round lip is fringed and densely pubescent (covered with fine hairs).



Photo source:

<http://www.orchidspecies.com/orphodir/denharveyanum.jpg>

Marni Turkel has a page dedicated to this species in which she reports on the difficulty in successfully growing and flowering this species. Her comments on *Dendrobium harveyanum* at <http://marniturkel.com/Pages/orchids/o.articles/dendharveyanum.html> are informative and thought-provoking. Marni says that for many years she struggled to grow and flower *Dendrobium harveyanum*. Research into its habitat showed that it came from a classic monsoon climate with heavy rainfall and cloudy skies in spring and summer. Autumn and winter have little or no rainfall, with bright light and warm days and cool nights. By the end of winter, humidity is low, and it is likely that the orchids receive little if any moisture, even from dew. She then says that originally, she grew the species with year-round moisture. Her plant was a small, struggling specimen with few roots and almost no flowers. With nothing to lose, several years ago she decided to adopt a grow-or-die attitude and began giving it a prolonged dry rest in winter. It was as if she had a different plant: strong growths, lots of active roots and flower spikes every year.

Synonyms in use are *Callista harveyana* (Rchb. f.) Kuntze 1891

Dendrobium jenkinsii Wallich ex Lindley 1839 (SECTION *Densiflora*) comes from Hainan province in China, Assam, eastern Himalayas, Nepal, Bhutan, Myanmar and Laos. It is a small-sized, warm to cool growing epiphyte in open forests on tree trunks at 700 -1,500m. Its common name is Jenkins's Dendrobium – Jenkins was an officer of the East India Trading Co. early 1800's. In China, its common name is Xiao Huang Hua Shi Hu, and in Thailand, Ueang Phung Noi



It has clustered, branching, fusiform to ovoid-oblong, 4 ribbed, flattened pseudobulbs carrying a single, terminal, thickened, leathery, rigid, oval to oblong, obtuse, notched leaves. Flowering in early spring on short 15 cm long, arching to pendant, simultaneously 1 to 5 flowered racemes that arise from near the apex of the leafed pseudobulb, it carries short-lived, wide open flowers that are similar to *Dendrobium lindleyi*. The main difference is that *Dendrobium jenkinsii* has a fewer flowered inflorescence while *Dendrobium lindleyi* has many flowers. *Dendrobium jenkinsii* has a bilobed lip while *Dendrobium lindleyi* is entire. *Dendrobium jenkinsii* has clustered, sulcate, ovoid, flattened pseudobulbs carrying a single, apical, ovate, thick, shiny, persistent leaf.

Some excellent photos of *Dendrobium jenkinsii* can be found at <http://picsr.com/search/dendrobium%C2%A0jenkinsii/page3>

This species is almost always named by growers as *Dendrobium aggregatum*, a synonym that has been published as valid in the Sanders hybrid list. Synonyms in use for this species are *Callista jenkinsii* Kuntze 1891; *Dendrobium aggregatum* Roxb. var. *jenkinsii* [Wall.]Lindley 1898; *Dendrobium marseillei* Gagn. 1934

Dendrobium lindleyi Steud. 1840 (*SECTION Densiflora*) is found throughout southeast Asia, including Sikkim, Bhutan, north-eastern India, Burma, Thailand, Laos, Vietnam, and southwestern China at 400 – 1,300m. A miniature to small sized, hot-cool growing epiphyte, this species can be found on the trunks and branches of deciduous trees. In Vietnam, this orchid grows high in the canopy in open, dry, primary, broad-leaved, semi-deciduous, mixed and coniferous forests. The plant has erect, clustered, thickened upwards from a slender base, almost spindle-shaped, angled stems carrying a solitary, oblong, leathery, obtuse, leaf. Flowering in late winter-early spring, the pleasantly fragrant flowers are borne on axillary, 5 to 15 flowered, often pendant racemes that arise from nodes at the middle of leafed and leafless canes. This species and its subspecies *Dendrobium lindleyi* var *jenkinsii* need a cool dry winter rest to ensure a spring blooming. As the bright yellow flower colour indicates, *Dendrobium lindleyi* is a bright light orchid and requires high light to flower well. Its common name is Lindley's Dendrobium named after an 1800's English Botanist 1800's. In Thailand, it is known as Ueang phung, and in China as Ju Shi Hu

Photo source:

<https://i.pinimg.com/originals/06/17/d9/0617d91a7c74bfc0c502541d8b162e81.jpg>

Synonyms in use are *Callista aggregata* (Roxb.) Kuntze 1891; *Dendrobium aggregatum* Rox. 1832; *Dendrobium albviride* var. *majus* Rolfe 1932; *Dendrobium lindleyi* var. *majus* (Rolfe) S.Y. Hu 1973; *Epidendrum aggregatum* Roxb. ex Steud. 1840.

Most commonly, this species is sold as *Dendrobium aggregatum*.





Dendrobium lindleyi is free flowering once it grows into a reasonable size plant as can be seen in this photo of *Dendrobium lindleyi* var. *majus*.

Photo source:

<https://www.orchidsocietynsw.com.au/NSW2010OrchidoftheYear.htm>

This species is also reported to benefit from a dry rest period and colder night temperatures down to 10°C, and will flower more freely as a result

Dendrobium palpebrae Lindley 1850 SECTION *Densiflora* is found in Bangladesh, eastern Himalayas, Yunnan province China, Myanmar, Thailand, Laos and Vietnam at 800-2,500 m (note the large altitude range). It is generally seen as a medium sized, warm to cold growing epiphytic species on primary and secondary forest trees. We saw this species in flower at Dalat in Vietnam several years ago on a tour organised by Tony Watkinson. Vegetatively, it has clustered, rather slender to subclavate, sulcate stems enveloped by membraneous sheaths carrying 2 to 5, towards the apex, lanceolate to oblong, acute leaves. Blooming in spring and late summer, 6-15 flowers are carried on 15 cm pendulous inflorescences.



Its common name, the Brow-Like *Dendrobium*, and in Thailand, Ueang Matchanu, is linked to the hairs on the lip base that look like eyelashes, hence its specific epithet *palpebra* which means eyelid.

This species is often confused with *Dendrobium farmeri* as the flowers and growth habit are very similar. The most significant difference is that the lip is more ovate, and has low side-lobes and the hairs that John Lindley described "like eyelashes".

Synonyms in use are *Callista palpebrae* (Lindl.) Kuntze 1891; *Callista palpebrae* (Lindl.) Brieger 1981; *Dendrobium farmeri* var. *album* Regel 1868

Photo source: <https://www.pinterest.com.au/pin/362891682454589020/?lp=true>



Dendrobium sulcatum Lindl. 1838 SECTION *Densiflora* is found in Assam, eastern Himalayas, Myanmar, Thailand, Laos, Vietnam and south-central China in tropical valleys at altitudes of 500 -1,000 meters. A small to medium sized, warm growing epiphyte, this species has flattened, 25 cm clavate pseudobulbs carrying 2 apical, ovate leaves. Flowering in late spring, the flowers are borne on short, pendulous inflorescences produced just below the apical leaf. The short-lived flowers are fimbriate. In India, the habitat extends from tropical valleys near Kalimpong and Darjeeling in Sikkim to the Khasi (Khasia) Hills, Assam, Manipur, and Meghalaya where plants can be found from 500-1000 m. Its common name is the Furrowed Lip Dendrobium, while in Thailand it is known as Ueang champanan, and in China, as Ju Cao Shi Hu

The synonym in use is *Callista sulcata* (Lindl.) Kuntze 1891.

Photo source: <https://www.orchidsforum.com/threads/few-orchid-species-in-situ-in-india.12427/>

Dendrobium thyrsoflorum B S Williams 1871 SECTION *Densiflora* is found in the Chinese Himalayas, Hainan China, Assam India, eastern Himalayas, Myanmar, Thailand, Laos and Vietnam at 1,200-2,000 meters. This species is a small to large sized, cool growing, epiphyte, lithophyte or terrestrial orchid inhabiting humid, mossy mixed and coniferous forests. It has slender, ridged, rounded, club-shaped, yellowish apically stems carrying 5- 7, persistent, smooth, flexible, dark green leaves. Flowering in spring, the dense pendant raceme that arises from the apex of the cane can bear up to 50 pleasantly fragrant flowers. The flowers are quite variable with the labellum colour ranging from a pale yellow to intense orange-yellow. Its common name is the Pine Cone-Like Raceme Dendrobium. In Thailand, it is known as Ueang mawn khai, while in China, it is known as Qui Hua Shi Hu



Photo source:

<https://www.pinterest.ch/pin/385761524309040568>

Synonyms in use are *Callista thyrsoflora* (Rchb.f. ex André) M.A.Clem. 2003; *Dendrobium densiflorum* var. *alboluteum* Hook.f. 1869; *Dendrobium galliceanum* Linden 1890; *Dendrobium thyrsoflorum* var. *bronckartii* Cogn. 1904; *Dendrobium thyrsoflorum* var. *minutiflorum* Aver. 2012

The next section is *Dendrobium*. Several members of this section are quite commonly seen in hobbyist collections, and most are undemanding to grow and flower. Some of the more commonly grown species in this section are:

Dendrobium albosanguineum

Dendrobium anosmum

Dendrobium aphyllum

Dendrobium chrysanthum

Dendrobium crepidatum

Dendrobium crystallinum

Dendrobium devonianum

Dendrobium dixanthum
Dendrobium falconeri
Dendrobium fimbriatum
Dendrobium findlayanum
Dendrobium friedericksianum
Dendrobium gibsonii
Dendrobium heterocarpum
Dendrobium lituiflorum
Dendrobium loddigesii
Dendrobium moniflorum
Dendrobium moschatum
Dendrobium nobile
Dendrobium parishii
Dendrobium primulinum
Dendrobium pulchellum
Dendrobium signatum
Dendrobium stricklandianum
Dendrobium tortile
Dendrobium unicum
Dendrobium wardianum

Dendrobium albosanguineum Lindley & Paxt. 1852 SECTION *Dendrobium* is found in Myanmar and Thailand growing as an epiphyte high in the canopy at 300-600m. The plants can usually be found in the tops of the tallest trees but is not common and may be threatened due to deforestation and over-collecting. The plants have stout, subclavate or cylindrical, clustered pseudobulbous canes with strongly developed nodes covered in white sheathing bracts carrying linear-lanceolate, light green, translucent, deciduous leaves. Spring flowering takes place from the nodes near to the top of more mature leafed and leafless canes on short, 2 to 7 flowered racemes with fragrant, fleshy, long-lived flowers. This

species comes from habitats that have a semi-dry, cool winter season. .

Its common name is the White and Blood-Red *Dendrobium*, and culturally, is said to grow best on tree fern slab as it prefers to dry out between watering.

Photo source:

http://web2.mendelu.cz/arboretum/upload/Dendrobium_albosanguineum.jpg

Synonyms in use are *Callista albosanguinea* (Lindl. & Paxton) Kuntze 1891; *Dendrobium atosanguineum* E. Morren & De Voss [Spalm]



Dendrobium anosmum Lindley 1845 SECTION *Dendrobium* is a large sized species from Malaysia, Laos, Vietnam, Hong Kong, Philippines, Indonesia, and Papua New Guinea where it grows as an epiphyte in gallery layers of lower primary forests up to 1,300m. In the Philippines, this species can be found growing in mountain forests below 750 m with *Aerides quinquevulnerum* and *Anota violacea*. While generally these habitats are distinctly drier in winter, in some

locations where this species occurs, it is wet all year. In Papua New Guinea, plants are common in the Bulolo and Wau areas where they can be found on rough-barked trees from sea level to 1,300 m

It grows to be a large to very large, arching to pendulous orchid with pendulous to 120 cm many noded stems with each node enveloped by a loose fitting sheath and carrying oblong elliptic, acute, deciduous leaves. Flowering in spring, racemes of 8 - 10 pleasantly fragrant flowers arise from the nodes all along the apice of the leafless cane. Culture for this plant can be problematic given the long pendant canes, and where possible, slab-mounting is the most effective option provided high humidity can be maintained through summer. Several colour forms are known including an album form and some cultivars that are much more intensely coloured. Its common name is the Unscented Dendrobium which

is a misnomer as the species is quite fragrant. In China it is known as Tan xiang shi hu



This species is often sold under one or more of the synonyms in use that include *Callista anosma* O. Ktze. 1891; *Callista macrophylla* [Lindl.] Kuntze 1891; *Callista scortechinii* O. Ktze. 1891; *Dendrobium anosmum* var. *dearei* (Rolfe) Ames & Quisumb. 1935; *Dendrobium anosmum* var. *giganteum* [Rchb.f.] Valmayor & Tiu 1984; *Dendrobium anosmum* var. *huttonii* (Rchb.f.) Ames & Quisumb. 1935; *Dendrobium dayanum* B.S. Williams 1864; *Dendrobium leucorhodum* Schlechter 1879; *Dendrobium macranthum* Hooker or Miquel?; *Dendrobium macrophyllum* Lindley not Ames or Richards?; *Dendrobium retusum* Llanos 1859; *Dendrobium scortechinii* Hooker 1890; *Dendrobium superbum* Rchb.f. 1864; *Dendrobium superbum* var. *anosmum* Rchb.f.?; *Dendrobium superbum* var. *burkei* Rchb.f. 1884; *Dendrobium superbum* var. *dearei* Rolfe 1891; and *Dendrobium superbum* var. *huttonii* Rchb.f. 1869

Photo source: <https://www.orchidee- karlsruhe.de/album/fotogalerie/den-anosmum-1-plawan-jpg/>

Dendrobium aphyllum (Roxb.) C.E.C. Fisch. 1928 SECTION *Dendrobium* is found in Hainan China, Assam, Bangladesh, eastern Himalayas, India, Maldive Islands, Nepal, Sri Lanka, western Himalayas, Andaman Islands, Myanmar, Thailand, Laos, Malaysia, Borneo, Java, Sumatra, Lesser Sunda Islands, Sulawesi and Queensland as a large sized, hot to cool growing, epiphyte or in deforested areas, as a lithophyte. This species which is often named as *Dendrobium pierardii* or *Dendrobium cucullatum* is found at 150-1,800 m in lowland and primary montane forests, and in China in mangrove swamps. It has slender, pendulous, leafy stems carrying linear-lanceolate or narrowly ovate, acuminate, deciduous leaves. Flowering throughout the year, but most commonly in winter and spring, the short inflorescence arises from the nodes of older leafless canes and has 1-3, fragrant, short-lived, transparent fragile flowers, clustered close to the cane. The fragrance is similar to that of violets.

This species is locally threatened due to habitat destruction and clearing, and over-collection. Its common name is The Hooded Dendrobium which refers to the cone-shaped lip, in China, it is known as Dou Chun Shi Hu] Similar to *Dendrobium anosmum*, this species is best slab or mount grown to accommodate the long pendant canes. Useful cultural information can be found at <http://www.toskar.org/dendrobium->



aphyllum/.

Photo source: <https://www.tokopedia.com/jonegoro/dendrobium-aphyllum-ukuran-raksasa>

Synonyms in use include *Callista aphylla* Kuntze 1891; *Cymbidium aphyllum* (Roxb.) Sw. 1799; *Dendrobium aphyllum* var. *cucullatum* [R. Br.] Sarkar 1984; *Dendrobium aphyllum* var. *katakianum* I. Barua 2001; *Dendrobium cucullatum* R. Brown 1822; *Dendrobium madrasense* A.D. Hawkes 1963; *Dendrobium oxyphyllum* Gagnep. 1950; *Dendrobium pierardii* Roxb. 1822; *Dendrobium pierardii* var. *cucullatum* [R. Br.] J.D. Hook 1890; *Epidendrum aphyllum* (Roxb.) Poir. 1810; and *Pierardia bicolor* (Roxb. ex Hook.) Raf. 1836

Dendrobium chrysanthum Wallich ex Lindley 1830 SECTION *Dendrobium* is widespread through the Himalayan foothills of the western Himalayas, Assam India, China, Nepal, Bhutan, Sikkim, Myanmar, Thailand, Laos and Vietnam. It is found as a large sized, warm to cold growing epiphyte, as a lithophyte on limestone cliffs in narrow crevasses and as a terrestrial species in humid, mossy, mixed and coniferous forests and primary, broadleaf, evergreen, lowland forests at 300 -2,200m. The pendulous, many noded, sulcate to 150 cm stems carry ovate-lanceolate, acuminate, shiny green leaves. Blooming from Spring-Autumn, the few to multiple flowered very short racemes arise on the opposite side of cane to the leaf on the upper portions of immature leafed-pseudobulbs. The inflorescence that arises opposite to the leaves has 1-3 fragrant, fleshy yellow flowers as the species name suggests. This species and *Dendrobium gibsonii* are similar and therefore often confused. *Dendrobium chrysanthum* has flowers with on canes carrying leaves, wider petals, narrower spread sepals and a less-rounded lip opening. Its common name is the Golden Yellow Flowered Dendrobium; in Thailand it is known as Ueang thian, Ueang kham sai, Ueang pu loei, Bai morakot and Uang Sai Morakat; while in China, its known as Shu Hua Shi Hu. More cultural information can be found at <http://www.toskar.org/dendrobium-chrysanthum/>



[chrysanthum/](http://www.toskar.org/dendrobium-chrysanthum/)

Photo source:

<http://www.orchidspecies.com/denchrysanthum.htm>

Synonyms in common use are *Callista chrysantha* (Wall.) Kuntze 1891; *Dendrobium chrysanthum* var. *anophthalama* Rchb.f. 1883; *Dendrobium chrysanthum* var. *microphthalama* Rchb.f. 1879; *Dendrobium microphthalmum* Van Geert 1879; *Dendrobium paxtonii* Lindley not Paxton 1839

Dendrobium crepidatum Lindl. & Paxton 1850 SECTION *Dendrobium* is found in China, Assam, Bangladesh, eastern Himalayas, India, Nepal, Sikkim, western Himalayas, Myanmar, Thailand, Laos and Vietnam at 600-2,100m as a small



to medium sized (30cm), cool to warm growing epiphyte in evergreen and semi-evergreen tropical forests. In India, it is found on tree trunks in the *Terminalia*, *Careya* and *Lagerstroemia spp* along with other orchid genera as a sub-erect to pendant species.

Dendrobium crepidatum var. *assimica*

Photo source:

<https://www.flickr.com/photos/ericinstf/5595413268>

It has tufted, sub-erect to pendulous, terete, striated, 45cm, many noded stems each covered with a papery sheath, and carrying 5 to 9, oblong to narrowly lanceolate, acute leaves. Flowering in spring, on short

purple inflorescences arising from near the apex of year-old leafless stems, this species has 1-4 shiny, waxy, delicately fragrant and long-lasting flowers. An album form is known. Its common name is the Shoe-Lip Dendrobium which refers to the cavity at the base of the column foot. In China, its known as Mei Gui Shi Hu, while in Thailand Ueang Sai Nam Khieo. Synonyms in common use are *Callista crepidata* (Lindl. & Paxton) Kuntze 1891; *Callista lawiana* (Lindl.) Kuntze 1891; *Dendrobium actinomorphy* Blatt. & Halb. 1921; *Dendrobium lawanum* Lindley 1859; *Dendrochilum roseum* Dalzell 1852

Dendrobium crystallinum Rchb. f. 1868 SECTION *Dendrobium* found in the Chinese Himalayas, Myanmar, Thailand, Laos, Cambodia and Vietnam as an epiphyte on small trees in exposed locations in evergreen, semi-deciduous and deciduous dry lowland forests and woodlands, and primary montane forests at 900-1,700m. This species is another medium sized, pendulous, warm to cool growing epiphyte with slender, erect or pendant pseudobulbs without nodes with 2-4, linear-lanceolate, soft-textured, distichous, deciduous leaves. Spring to summer flowering, it has short 5 cm



axillary inflorescences with 1-3 highly fragrant flowers that emerge from near the apex of new pseudobulbs.

Photo source:
<https://www.pinterest.com.au/pin/24769866676567318/?lp=true>

An album form is known, and the flower colour intensity of specimens of *Dendrobium crystallinum* can be quite variable, and *Dendrobium crystallinum* fma. *ochroleucum* lacks the purple-magenta blotches. Its common name is the Shiny Crystal Dendrobium referring to the crystalline papillae on the column covering the anther cap. In Thailand, it is known as Ueang Sai sam si and Ueang nang fawn. *Dendrobium crystallinum* has been used for

medicinal purposes as a tea in China. Synonyms in common use are *Callista crystallina* (Rchb. f.) Kuntze 1891; *Dendrobium crystallinum* var. *hainanense* S.J. Cheng & C.Z. Tang 1986

Dendrobium devonianum Paxton 1840 SECTION *Dendrobium* is found in the Chinese Himalayas, Assam, eastern Himalayas, Bhutan, Myanmar, Thailand, Laos, southern China and Vietnam. Growing as a warm-cool epiphyte on tree trunks in montane forests at 500-2,000m, it is a medium sized species with pendulous, cylindrical, slender, slightly fleshy, sub-branched, many noded stems carrying narrowly ovate-lanceolate, leathery, clasping sheath base, long acuminate leaves. Blooming in late winter and spring, the erect to spreading 30cm many flowered inflorescences have with long-lived, fleshy, fragrant flowers that arise from the nodes near the apex of leafless to meter-long canes. The flowers are variable especially in the amount and length of hairs on the petals and lip. *Dendrobium devonianum* var. *rhodoneurum* is a predominantly pink coloured form. This species has also been used in Chinese herbal medicine. Its common name is Devon's Dendrobium named after the 1800's English Count and Orchid enthusiast. In Thailand, it is known as Miang -



Sai man pra in and Ueang sai pha kang, while in China, it is known as Chi Ban Shi Hu. Synonyms in common use are *Callista devoniana* (Paxton) Kuntze 1891; *Callista moulmeinensis* (Parish ex Hook. f.) Kuntze 1891; *Dendrobium brevifolium* Hort. ex Lindley 1859; *Dendrobium devonianum* var. *candidulum* Rchb.f. 1876; *Dendrobium devonianum* var. *elliottianum* Rchb.f. 1876; *Dendrobium devonianum* var. *rhodoneurum* Rchb.f. 1868; *Dendrobium moulmeinense* Parish ex Hook. f. 1890; *Dendrobium pictum* Griff. ex Lindl. 1859; *Dendrobium pulchellum* Lindley non Loddiges or



Roxbury; *Dendrobium pulchellum* var. *devonianum* [Paxton] Rchb.f

Photos source: <https://www.murvegetalpatrickblanc.com/inspiration/epiphytes?page=7>

Dendrobium dixanthum Rchb. f. 1865 SECTION *Holochrysa* is found in Myanmar, Thailand and Laos as medium to large sized, warm growing epiphyte in the tops of deciduous forests tall trees at about 700m. In Myanmar, the species is often found with *Dendrobium albosanguineum*. It has erect to pendant, terete stems carrying 4, ligulate to lanceolate, sub-erect, acute or acuminate leaves. Blooming in winter and spring, flowers are borne on pendant racemes emerging from the nodes, at and near the apex of mature pseudobulbs carrying thin textured flowers. It was moved from SECTION *Dendrobium* to SECTION *Holochrysa* following DNA analysis.



Photos source: https://www.facebook.com/pg/Johor-Orchids-Species-Station-712044775590901/photos/?tab=album&album_id=1392258290902876



Its common name, the Twice Yellow Dendrobium refers to the flower colours. In Thailand, it is known as Ueang khamplu - Ueang thian - Ueang kham pawn - Ueang phai - Ueang baiphai, and in China as Huang Hua Shi Hu. The synonym in common use is *Callista dixantha* (Rchb. f.) Kuntze 1891

Dendrobium falconeri Hook. f. 1856 SECTION *Dendrobium* comes from Assam India, Chinese Himalayas, eastern Himalayas, Bhutan, Myanmar, Thailand and Taiwan where it grows as a large sized, cool to warm growing epiphyte on lightly shaded branches and tree trunks in dense forests, and as a lithophyte on rocks along valleys at 800-1,900m. This species has pendant, branching, knotty, soft, slender stems that often have roots at the nodes, and over time, grows into a large, tangled mass of plant material. Few, linear, grass-like leaves that are deciduous appear at the apex of new growths. Flowering in spring, very short, single flowered inflorescences arise along the old and new canes carrying a single, fragrant flower that lasts about 2 weeks. Its common name is Falconer's Dendrobium named after the 1800's English Director of Kolkata Botanical Gardens. In Thailand, it is known as Sai wisut - Rot rueang saeng - Ueang mieng,

and in China as Chuan Zhu Shi Hu

The photos illustrate the growth habit of this species. The in-situ photo is from <http://www.orchidspecies.com/orphotdir/dendfalconeri.jpg>, and the photo to the right is from <https://travaldo.blogspot.com/2018/01/dendrobium-falconeri-care-and-culture.html>.

Synonyms in common use are *Callista falconeri* (Hook.) Kuntze 1891; *Dendrobium erythroglossum* Hayata 1914; *Dendrobium falconeri albidulum* Rchb.f. 1876; *Dendrobium falconeri* var. *albidulum* (Rchb.f.) B.S.Williams 1894; *Dendrobium falconeri* var. *giganteum* B.S.Williams 1885; *Dendrobium falconeri* var. *robustum* Rchb.f. 1879; *Dendrobium falconeri* var.



senapatianum C.Deori, Gogoi & A.A.Mao 2010. This species has a reputation for being difficult to sustain in cultivation. *Dendrobium fimbriatum* Hooker 1823 SECTION *Holochrysa* is from Hainan and southeastern China, western Himalayas, Bangladesh, eastern Himalayas, Assam India, Nepal, Bhutan, Sikkim, Myanmar, Thailand, Malaysia, Laos and Vietnam where it grows as a large-sized, warm to cold growing epiphyte, lithophyte or terrestrial in humid, mossy mixed and coniferous forests at 800-2,400m. This species has long, erect, arching or pendulous, light-yellow green when aged, to 120 cm long canes that are thickest in the middle and have many oblong to lanceolate, acute or acuminate, deciduous leaves. While predominantly flowering in spring, this species can flower at any time of the year on pendant, axillary, many flowered racemes arising from the nodes near the apex of leafless and mature canes. The flowers have an unpleasant sour fragrance.



Photo source:

https://www.orquidariorecantodasflores.com.br/dendrobium_fimbriatum_s_uavissimo/prod-3420099/

Its common name is the Fringe-Lipped Dendrobium. In Thailand, it is known as - Waew mayura - Ueang kham noi - Ueang kham foi - Ueang kham ta dam, and in China as Liu SU Shi Hu. This species has been used in Asian medicine.

The form *Dendrobium fimbriatum* var. *occulatum* which has a distinct 'eye' or occula or maroon-blotched floral labellum is the most common in cultivation with the pure, yellow-flowered form less commonly seen.

Photo source:

<http://www.slippertalk.com/forum/showthread.php?t=40852>

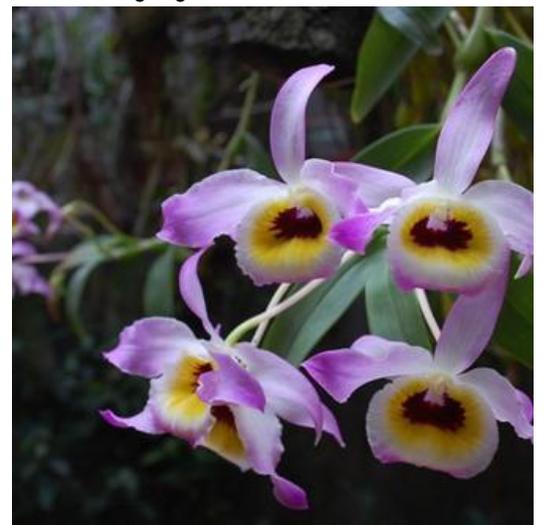
Synonyms in common use are *Callista fimbriata* (Hook.) Kuntze 1891; *Callista normalis* (Falc.) Kuntze 1891; *Dendrobium normale* Falc. 1839; *Dendrobium paxtonii* Paxt. 1839



Photo by cxcanh

Dendrobium findlayanum Par. & Rchb.f 1874 SECTION *Dendrobium* is found in the Chinese Himalayas, Myanmar, Thailand and Laos where it grows as a medium to large sized, cool growing epiphyte in at altitudes of 1,000-1,700m in mixed forests. The 50cm sulcate canes are bilaterally compressed with swollen nodes (up to 7 per cane) coloured green before becoming yellow with age carrying deciduous, narrowly elliptic or lanceolate, acute, bright green leaves.

Blooming in winter and spring takes place on very short, axillary, racemose inflorescences that arise from the nodes near the apex of mature leafless canes with few, long-lasting, colour-variable, fragrant flowers. An albinistic colour variant is known and the form *Dendrobium findlayanum* var. *occulatum* has two distinct maroon 'eyes' or occula in the base of the labellum. Its common name is Findlay's Dendrobium after an 1800's English collector in Borneo. In Thailand, it is known as Phuang yok, and in China as Bang Jie Shi Hu





The photo to the left clearly shows the very distinctive sulcate pseudobulbs.

Photos source:

http://bluenanta.com/orchid/57765/species_detail/?tab=gal

Synonyms in common use are *Callista findlayana* (Parish & Rchb. f.) Kuntze 1891; *Dendrobium findleyanum* Par. & Rchb.f 1874(misspelling)

Dendrobium friedericksianum Rchb.f 1887 SECTION

Dendrobium is found in Thailand, Malaysia and Cambodia where it grows as an epiphyte in the canopy of low elevation primary and secondary forest trees. It is a hot to cool growing, medium sized, epiphyte with suberect, basally slender and cylindrical to clavate above, light yellow stems carrying in the apical third, several deciduous leaves. Blooming in spring, 2-4 waxy, long-lived flowers are borne on short, racemose inflorescences. Its common name is Frederick's Dendrobium. In Thailand it is known as Lueang chantabun.



Photo source: http://bluenanta.com/orchid/57809/species_detail/?tab=gal

Dendrobium friedericksianum var *oculatum* Seidenfaden & Smitinand 1959 is a variety with red blotches on either side of the base of the lip. This form is more commonly seen in collections.



Photo source: <http://ricardogupi.blogspot.com/2014/02/dendrobium-friedericksianum-rchbf-1887.html>



Dendrobium gibsonii Paxton 1838 SECTION *Holochrysa* is found in India, Nepal, Bhutan, Myanmar, Thailand, China and Vietnam at 650-1,650m as a large sized, warm to cool growing epiphyte or lithophyte on mossy limestone cliffs. It has centrally swollen, tapering towards the apex, pendulous, ribbed stems carrying 6 to 10, ovate to lanceolate, acute, deciduous leaves. Flowering in spring and summer on a slightly fractiflex, the nodding to pendulous, 15- 20 cm, loosely 6 to 15 flowered inflorescence arises on older leafless canes. While normally epiphytic, in deforested areas it can be found growing lithophytically. This species was moved from SECTION *Dendrobium* to SECTION *Holochrysa* following DNA analysis. This species and *Dendrobium chrysanthum* are similar but *Dendrobium gibsonii* has deciduous leaves, narrower petals, sepals that are much more spreading and the lip opening is rounder.

Photo source: http://bluenanta.com/orchid/57860/species_detail/?tab=gal

Synonyms in use are *Callista binocularis* (Rchb.f.) Kuntze 1891; *Callista gibsonii* (Lindl.) Kuntze 1891; *Dendrobium binoculare* Rchb.f. 1869;

Dendrobium fuscatum Lindl. 1859; *Stachyobium aureum* Rchb.f. 1869

Its common name is Gibson's Dendrobium named after an 1800's English Orchid Collector. In China, it is known as Qu Zhou Shi Hu and in Thailand as Ueang Kham Ta

Dendrobium heterocarpum Wall. ex Lindl. 1830 SECTION *Dendrobium* can be found in the Chinese Himalayas, Assam, eastern Himalayas, Nepal, Bhutan, Sikkim, Sri Lanka, Myanmar, Thailand, Laos, Vietnam, Borneo, Java, Lesser Sunda Islands, Sumatra, Sulawesi and the Philippines. Growing in evergreen lowland forests and primary montane forests as a small to very large epiphyte at 100-1,800m this species has fusiform or subcylindrical, erect or pendulous, many noded, stems that yellow with age. Tubular basal sheaths carrying deciduous, ligulate or oblong-lanceolate, acute to obtuse leaves. Blooming in winter through spring and summer, the flowers are borne on lateral, short, few to several, long-lived, both fragrant and not fragrant flowered inflorescences that arise from the nodes on 2- to 3-year-old leafless canes.

Gary Yong Gee writing in the Orchid Species Bulletin in September 2011 says the *Dendrobium heterocarpum* has long-lived flowers that are sweetly fragrant, however some of the plants from the Philippines are not perfumed. Howard Wood (2006) recognises *Dendrobium rhombeum* Lindl., the Philippine variant, as distinct. Jim Cootes (2001) says that there are two forms found in the Philippines. One form grows erect to about 50 cm long and the flowers have a hairy lip with a lot of brown markings. The other is semi-pendulous with stems up to 2 m long, which have flowers that have a differently shaped, smooth lip. There seem to be two distinct species involved in the Philippines. Jim Comber (1990) says that plants in the Philippines are quite distinct from those found in Thailand whilst those from Borneo have much smaller flowers than either Javanese or Thai plants.

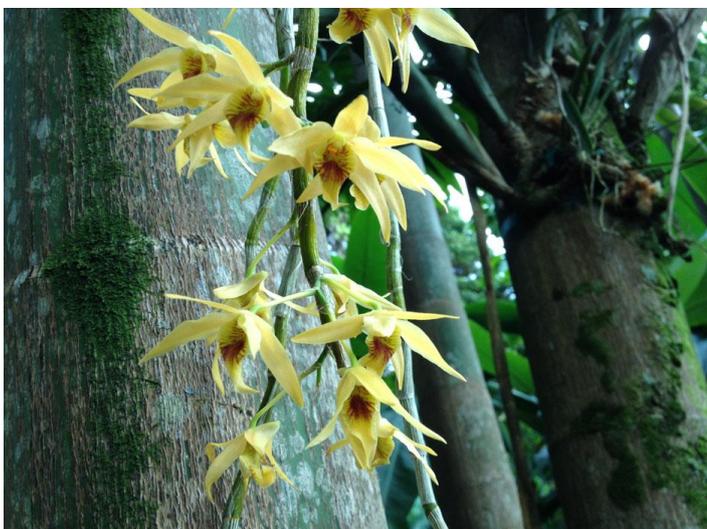


Photo source:

<https://travaldo.blogspot.com/2018/01/dendrobium-heterocarpum-care-and-culture.html>

Its common name is The Different Fruit Dendrobium. In Thailand, it is known as Ueang si tan, and in China, as Jian Dao Chun Shi Hu. Synonyms in common use are *Callista aurea* [Lindl.] Kuntze 1891; *Callista heterocarpa* (Wall. ex Lindl.) Kuntze 1891; *Dendrobium atractodes* Ridl. 1885; *Dendrobium aureum* Lindl. 1830; *Dendrobium aureum* var. *pallidum* Lindl. 1839; *Dendrobium heterocarpum* var. *henshalii* Hook. 1857; *Dendrobium minahassae* Kraenzlin 1910; *Dendrobium rhombeum* Lindley 1843.

Dendrobium lituiflorum Lindley 1856 SECTION *Dendrobium* is found in the Chinese Himalayas, Assam, Bangladesh, eastern Himalayas, Myanmar, Thailand, Laos and Vietnam in broadleaved forests on tree trunks at 300m. Growing epiphytically, this species has clustered, slender, reed-like, pendulous, 11 to 15 noded, covered in sheaths, basally swollen stems carrying deciduous, fleshy, linear-lanceolate, acute leaves. Blooming in spring through autumn, one-five longlasting, fragrant flowers are borne on short scapes that arise from nodes along dormant canes. This species is deciduous in the dry, cooler months of the year.



Photo source:

http://bluenanta.com/orchid/58255/species_detail/?tab=gal

Albinistic and pure alba forms exist but are less common in collections.

Photo source:

<https://www.flickr.com/photos/81918877@N00/12155988825>



This species common name is The Bent-Raceme Dendrobium. In Thailand, it is known as Ueang sai muang - Ueang khrang, and in China as La Ba Chun Shi Hu. Synonyms in common use are *Callista lituiflora* (Lindl.) Kuntze 1891 and *Dendrobium hanburyanum* Rchb.f 1856

Dendrobium loddigesii Rolfe 1887 SECTION *Dendrobium* from Laos, Vietnam, China and Hong Kong is a miniature to small sized, cool growing epiphyte, lithophyte or terrestrial. Its habitat is humid, mossy, mixed and coniferous forests at 1,000 – 1,500m. It has tufted, pendant, subterete, striated, several noded, white sheathed stems carrying alternate, fleshy, oblong, acute leaves and experiences a dry cooler winter and a warmer wet spring and summer. Flowering in Spring, the long-lasting, fragrant flowers arise on short single flowered inflorescences at the nodes of leafless canes. Some forms with variegated foliage have been discovered and are now being propagated for commercial sale. This species was well known in cultivation for many years before its natural occurrence habitat was discovered and it was described and identified. It is easily propagated from the stem growths.



Photo source:

http://bluenanta.com/orchid/58261/species_detail/?tab=gal

Its common name is Loddiges' Dendrobium after an English botanist of the 1800's. In China, it is known as Mei Hua Shi Hu. Synonyms in common use are *Callista loddigesii* (Rolfe) Kuntze 1891; *Dendrobium pulchellum* Loddiges not Roxb. 1933; *Dendrobium seidelianum* Rchb.f?

Dendrobium moniliforme (L.) Sw. 1799 SECTION *Dendrobium* is found in China, Western Himalayas, Nepal, Eastern Himalayas, Assam, Myanmar, Vietnam, Korea, Ryukyus Islands and Taiwan at 800-3,000m. It can be a small to large sized, cold to warm epiphyte growing in broadleaf forests or as a lithophyte on rocks. It can have either erect or



pendant stems, that are tufted, terete, many noded, slightly wider in the middle, purplish green in colour and covered with greyish sheaths. These canes yellow with age, and have narrowly lanceolate, deciduous, obtuse leaves. Flowering takes place from winter to the end of summer on a very short, 2 flowered inflorescences that arise from the nodes of old leafless canes. This species is deciduous, and the flowers are pleasantly fragrant, and range from white through pale rose pink and lemon in colour.

Photo source: <https://choiphonglan.blogspot.com/2017/06/dendrobium-moniliforme-l-sw-1799.html>

Photo source:
http://bluenanta.com/orchid/58431/species_detail/?tab=gal



Variegated foliage forms are known and are increasingly being bred for the commercial market including a tricoloured form from Japan where the miniature and variegated forms are desired. Many varietal forms are marketed with different leaf variegation, flower colour, and flower shapes (similar to *Neofinetia falcata*). Often, these forms are grown and exhibited for their foliage rather than their flowers.

Photo source:
<https://www.orchidweb.com/orchids/dendrobium/species/dendrobium-moniliforme-shoudai>

This species common name is the Necklace-Shaped Dendrobium; in China it is known as Xi Jing Shi Hu. There are many synonyms in common use; *Callista candida* (Wall. ex Lindl.) Kuntze 1891; *Callista japonica* Kuntze 1891; *Callista moniliformis* (L.) Kuntze 1891; *Dendrobium castum* Bateman 1868; *Dendrobium crispulum* Kimura & Migo 1936; *Dendrobium heishanense* Hayata 1914; *Dendrobium japonicum* Lindley 1830; *Dendrobium kosepangii* C.L.Tso 1933; *Dendrobium monile*[Thunb.]Kraenzl 1910; *Dendrobium moniliforme* var. *malipoense* L.J.Chen & Z.J.Liu, J. Wuhan 2008; *Dendrobium nienkui* Tso 1933; *Dendrobium taiwanianum* S.S.Ying 1978; *Dendrobium yunnanense* Finet 1907; *Dendrobium zonatum* Rolfe 1903; *Epidendrum monile* Thunberg 1799; *Epidendrum moniliferum* Panzer 1783; **Epidendrum moniliforme* Linn. 1753; *Limodorum monile* (Thunb.) Thunb. 1794; *Onychium japonicum* Bl. 1848; *Ormostema albiflora* Raf. 1836

Dendrobium moschatum Sw. 1805 SECTION *Holochrysa* occurs through the Western and Eastern Himalayas, Assam, Bangladesh, India, Nepal, Bhutan, Sikkim, Myanmar, Hainan China, Thailand, Laos and Vietnam as an epiphyte in open forests on tree trunks at 300-900m. It is large, hot to warm growing epiphyte with erect, arching or pendulous, terete, canes that turn brown with age. The narrowly elliptic to oblong-ovate, leathery, acute leaves are carried in the apical half. Flowering occurs in late spring and early summer on an axillary, pendulous, 20 cm, few to several flowered racemes with musk scented flowers that last about a week from or near the apex of a leafless cane. This species is the type species for SECTION *Holochrysa*.



Photo source:
<https://www.flickr.com/photos/90774088@N04/11032154843>

This species has an unusual pouch-shaped labellum as shown in the closeup photo. Flower colour is highly variable ranging from lemon yellow to intense/orange through to dusky pink forms. Photo source: <https://www.mashrita.com/product/orchid-dendrobium-moschatum/>



Its common name is the Musky Smelling Dendrobium. In Thailand, it is known as Leueang nok khamin - Ueang mawn khai - Ueang champa ; while in China it is known as China Shao Chun Shi Hu. Synonyms in common use include *Callista calceola* (Carey ex Hook.) Kuntze 1891; *Callista moschata* Kuntze 1891; *Cymbidium moschatum* Willd. 1805; *Dendrobium calceolaria* Carey ex Hook. 1825; *Dendrobium cupreum* Herb. ex Lindl. 1835; *Dendrobium moschatum* Wall. ex D. Don 1825; *Dendrobium moschatum* var. *unguipetalum* I.Barua 2001; *Epidendrum moschatum* Buch.-Ham. 1800; *Thicuania moschata* (Sw.) Raf. 1836

Dendrobium nobile Lindley 1830 SECTION *Dendrobium* is a medium sized species found in the Chinese and Eastern Himalayas, Assam, India, Nepal, Bhutan, Sikkim, Myanmar, Thailand, Laos and Vietnam. It is a cool to hot growing terrestrial or lithophytic species in broadleaf, evergreen, lowland forests and primary montane forests, and often on mossy limestone rocks at 200 -2,000m. With erect, clustered, compressed, grooved with age, yellowish stems that carry distichous, coriaceous, strap shaped or oblong, persistent leaves, this species flowers in winter and spring but can flower throughout the years given appropriate conditions. Short, 2 to 4 flowered racemes bear fragrant, waxy, sometimes heavy-textured, long-lived, highly variable flowers that arise at the upper nodes of leafed and leafless canes.



Photo source: <https://wsbeorchids.org/2017/365-days-of-orchids-day-106-dendrobium-nobile/>

This species is highly variable as to colour and flower shape, with some line-bred cultivars having much more rounded and filled in flowers. Several varietal forms are recognised. It has been widely used in hybridising in Japan and Hawaii, and many of the so called soft-cane or nobile hybrids with have *Dendrobium nobile* in their breeding. Care needs to be taken in this regard as many are sold as *Dendrobium nobile*, but in fact are hybrids.



The typical flower form is relatively open although *Dendrobium nobile* var. *cooksonianum* is more intensely coloured and has larger petals and sepals.

Photo source: <https://afriorchids.co.za/products/dendrobium-nobile-var-cooksonii>

Dendrobium nobile var. *virginalis* is an alba form.

Photo source:

<https://wsbeorchids.org/2017/365-days-of-orchids-day-106-dendrobium-nobile/>



Its common is the Noble Dendrobium. In Thailand, it is known as Ueang Khao Kiu, in China Shi Hu. Synonyms in use are *Callista nobilis* (Lindl.) Kuntze 1891; *Dendrobium coerulescens* Wallich 1838; *Dendrobium formosanum* [Rchb.f.] Masamune 1933; *Dendrobium lindleyanum* Griffith 1851; *Dendrobium nobile* f. *nobilis* (Rchb.f.) M.Hiroe 1971; *Dendrobium nobile* var. *alboluteum* Huyen & Aver. 1989; *Dendrobium nobile* var. *formosanum* Rchb.f. 1883; *Dendrobium nobile* var. *nobilis* Rchb.f. 1833; *Dendrobium nobile virginale* Rolfe 1900; *Dendrobium wallichianum* B.S.Williams 1862

Dendrobium parishii Low 1863 SECTION *Dendrobium* comes from China, Assam, Bangladesh, Eastern Himalayas, Myanmar, Thailand, Laos and Vietnam where it grows as an epiphyte in broadleaf, evergreen, lowland forests and primary montane forests at 250-1,700m. It is a small to medium sized, hot to cool growing species with erect or slightly pendant yellowish stems enveloped by white, membranous sheaths carrying narrowly ovate to elliptic, obtuse, stiff, leathery, blunt, deciduous leaves that are apically notched. Fragrant, longlasting flowers borne on short 2-3 flowered racemes occur from February to August with a peak time May and June. Flowers arise from the nodes on the upper half of old, pendulous, leafless canes. Various colour forms are known including albinistic and coerulea variants.

Its common name is Parish's Dendrobium, named after an 1800's English missionary and orchid collector. In Thailand, it is known as Ueang sai nam khrang - Ueang attackrit - Ueang inthakrit - Ueang sai nam khrang, and in China as Zi Ban Shi Hu



The pure alba form is less often seen but is very attractive.

Photos source:

http://bluenanta.com/orchid/58641/species_detail/?tab=gal

Synonyms in use are *Callista parishii* (Rchb. f.) Kuntze 1891;

Callista rhodopterygia (Rchb. f.) Kuntze 1891; *Dendrobium polyphlebium* Rchb.f. 1887; *Dendrobium rhodopterygium* Rchb.f 1875



Dendrobium primulinum Lindley 1858 SECTION *Dendrobium* is found in Assam, Eastern Himalayas, Nepal, Western Himalayas, Andaman Islands, Myanmar, Thailand, Laos, China and Vietnam. It is large, warm growing, pendant epiphyte that grows on deciduous trees at 500-1,000m. This species grows in habitats where it receives direct sunlight for a minimum of 3 hours each day. *Dendrobium primulinum* has clustered, ascending, prostrate or pendulous, terete, sulcate stems covered in white sheath. Flowering from winter through to summer, flowers are borne on short



inflorescences with minute bracts and 1 or 2 fragrant flowers. The flower stems arise from nodes along leafless canes. Several colour variants of this species are known including alba, albinistic and predominantly yellow. Its common name is the Primrose Yellow Dendrobium, while in Thailand it is known as Ueang Sai Nam Phung

Photo source: <https://travaldo.blogspot.com/2018/02/dendrobium-primulinum-care-and-culture.html>

Some authors consider this species to be synonymous with *Dendrobium polyanthum*. Other synonyms in use are *Callista primulina* (Lindl.) Kuntze 1891 and *Dendrobium nobile* var. *pallidiflorum* Hooker 1856

Photo source:
<http://www.htbg.com/Orchidaceae/ORCH-13-7-23-4/>



Photo source: <http://www.orchidhub.com/wholesale-catalog/cattleya-orchids/>



Dendrobium pulchellum Roxb. 1832 SECTION *Dendrobium* is found in Assam India, Bangladesh, eastern Himalayas, Nepal, Myanmar, Thailand, Malaysia, Laos, China and Vietnam at 70-2,200m. It is a large, hot to cool growing epiphyte that is found in open deciduous forests with hit, wet humid summers and cooler, drier winters. It has erect, slender, terete, purplish with age, up to 2m stems enveloped by purple-striped leaf sheaths and carrying persistent, linear-oblong, cordate at base, obtuse or acute leaves. Blooming from late winter to spring, on drooping several flowered inflorescences up to 30 cm long arise laterally from nodes near the apex of leafed and leafless canes. The 5-15, long-lasting, up to 13cm flowers are pleasantly fragrant. Several colour forms are known including albinistic variants. This species common name is the Charming Dendrobium while in Thailand, it is known as Ueang chang nao - Ueang takwai



Photo source:
<https://travaldo.blogspot.com/2018/02/dendrobium-pulchellum-care-and-culture.html>

Synonyms in use are *Callista pulchella* (Roxb. ex Lindl.) Kuntze 1891; *Dendrobium brevifolium* Lindl. 1858; *Dendrobium dalhousieanum* Wallich 1844; *Dendrobium moschatum* Griff. 1851



Photos source:
http://www.orchidroots.com/orchid/58812/species_detail/?tab=gal&uncertainty=1



Dendrobium signatum Rchb. f. 1884 SECTION *Dendrobium* comes from Myanmar, Thailand, Laos and Vietnam at 200-1,500m. It is a medium sized, hot to cool growing epiphyte with slender, fleshy, becoming pendulous with age pseudobulbs carrying leathery, lanceolate, pointed, eventually deciduous leaves. Flowering from winter to early summer, two long-lived, fragrant flowers are borne on short inflorescences that arise on a mature leafless cane towards the apex. Several colour variants are known.



Photo source:
<https://www.phakhaolao.la/en/kb/0000124?t%5B0%5D=73&t%5B1%5D=68&page=5&p=browse>



A different colour form. Photo source:

<https://orchidgarden.co.uk/shop/botanical-orchids/orchid-dendrobium-signatum-fs.html>

This species common name is the Marked Dendrobium. In Thailand, it is known as Kluay mai noi - Ueang kham kiu - Ueang tin nok - Ueang tin pet. Synonyms in use are *Dendrobium hildebrandtii* Rolfe 1894; *Dendrobium tortile* var. *hildebrandi* (Rolfe) T. Tang & F.T. Wang 1951

Dendrobium tortile Lindley 1847 SECTION *Dendrobium* is found in Assam India, Bangladesh, Andaman Islands, Malaysia, Myanmar, Thailand, Laos and Vietnam at 1,200m. It is a small to medium sized, cool, ascending to pendant growing epiphyte, terrestrial or lithophyte. It has very distinctive club to spindle shaped, grooved and medially flattened stems with tubular leaf sheaths carrying 3 to 4, thin, deciduous, curved, leathery, sharply pointed leaves. Longlasting, fragrant flowers appear from late winter to early summer on axillary up to 8 cm racemes with 2-3 flowers per inflorescence. The inflorescences arise from the upper leaf axils of leafless canes. As do many of the species in the Section, flower colour is quite variable with several colour forms known, predominantly pale pink to more intense pink as well as albinistic variants.



This photo from Peter Williams shows *Dendrobium tortile* growing lithophytically in Thailand.

Photo source:

http://bluenanta.com/orchid/59308/species_detail/?tab=gal
<https://www.pinterest.com.au/pin/437834395016171757/?lp=true>



Its common name is the Twisted Dendrobium. In Thailand, it is known as Khao kiu. Synonyms in use are *Dendrobium dartoisianum* De Wild 1906; *Dendrobium haniffi* Ridl. ex Burkill 1924

Dendrobium unicum Seidenfaden 1970 SECTION *Dendrobium*. This species' common name, the Unique *Dendrobium* is quite appropriate as there are few others like it. Found in Vietnam, Laos, Myanmar and Thailand in evergreen; semi-deciduous and deciduous dry lowland forests and savannah woodlands at 800-1,500m, it is both epiphytic and lithophytic. Some years ago, on a trip to Thailand, we saw this species in flower during a prolonged drought. The plants were severely desiccated and blackened by their exposure to the hot sun (note the lichen on the branches).



This is a truly miniature species with clustered, small stems carrying 2 to 3, apical, narrow, persistent leaves. Flowering in late spring and early summer, up to 4 fragrant flowers are borne on axillary, short racemes that arise from near and at the apex of leafed and leafless canes. It is similar to *Dendrobium dickasonii* and *Dendrobium lamyaiiae* but has smaller flowers with a wider cupped lip and three central keels

Closeup flower photo source
http://bluenanta.com/orchid/900000570/hybrid_detail/?tab=sum



Dendrobium wardianum Warner 1862 SECTION *Dendrobium* is found in Assam, China, Eastern Himalayas, Myanmar, Thailand and Vietnam, where it is a medium to large sized cool growing epiphyte or lithophyte. Found in broadleaved, evergreen lowland forests between 1,000 and 2,000m, it is an erect to pendulous species with terete, nodally thickened, with up to 80 cm stems carrying deciduous, oblong-lanceolate, acute leaves. Flowering in winter, very short inflorescences typically carry 1-3 fragrant, large long-lasting flowers that arise from prior years' leafless canes. Several colour forms are known. Large, brightly coloured *Dendrobium wardianum* flowers are said to stand out like beacons in the forest. Its habitats are under threat as clearing for cropping and plantations expansion.



Photo source:
<https://travaldo.blogspot.com/2018/02/dendrobium-wardianum-care-and-culture.html>

Its common name is Ward's *Dendrobium* named after an 1800's English orchid enthusiast. In Thailand, it is known as Mani trirong, and in China as Da Bao Qiao Shi Hu. Synonyms in use are *Callista wardiana* Kuntze 1891; *Dendrobium album* Wms.;

Dendrobium falconeri Hkr. var *wardianum* Hkr.; *Dendrobium wardianum candidum* Rchb.f. 1876; *Dendrobium wardianum* var. *assamicum* S. Jenn. 1875; *Dendrobium wardianum* var. *pictum* O'Brien 1894.

In 2008, while on a trip to Chiang Mai, we saw and tried to purchase large plants of *Dendrobium wardianum* from a nursery but were informed that the plants were not for sale. The plants were in flower, and given the large, heavy substance and intense flower colouration, I believe that the plants were most likely 4N forms. To make a long story short, the nursery proprietor Hans Hermans failed to supply the other orchids that were purchased by the group and despite efforts over several years, never made good on his promises to supply plants or reimburse. The nursery closed and subsequently, Mr Hermans died without meeting his debt to many orchid growers who lost money dealing with him.

SECTION Formosae includes the species which have the canes covered in fine 'hair'. Many members of this *Section* have well-deserved reputations for being difficult to grow in cultivation. All species of this section including those which occurs eastern Indochina have attractive, long-lasting flowers and are of outstanding significance for ornamental horticulture and breeding. Extensive collection in nature for the orchid trade and deforestation for agriculture mean that they have become endangered or extinct in many areas of their primary distribution.

Some of the more commonly seen members of this section in cultivation are:

Dendrobium bellatulum
Dendrobium cariniferum
Dendrobium catenatum
Dendrobium christyanum
Dendrobium cruentum,
Dendrobium daklakense
Dendrobium dearei
Dendrobium draconis
Dendrobium formosum
Dendrobium infundibulum
Dendrobium longicornu
Dendrobium ochraceum
Dendrobium sanderae
Dendrobium scabrilingue
Dendrobium schuetzei
Dendrobium senile
Dendrobium trigonopus
Dendrobium wattii
Dendrobium williamsonii

Dendrobium bellatulum Rolfe 1903 *SECTION Formosae*. This miniature sized warm to cold growing species from China, Himalayas, Laos, Myanmar, Thailand and Vietnam is found in primary montane forests at 700- 2,100m. It is a sometimes solitary epiphyte with tufted, erect to suberect, close set, very short, ovoid to fusiform, grey-green stems covered in fine black hairs. They have 2-4, eventually deciduous, subterminal, distichous, ligulate to narrowly elliptic to oblong-lanceolate, obtuse, unequally bilobed, grey-green leathery leaves, covered in fine black hairs on both surfaces. Flowering in spring, on very short racemes, the 3-5 flowered inflorescences arise from leafy stems. The flowers are pleasantly fragrant and longlasting. In common with many member of the genus *Dendrobium*, several colour variants exist.



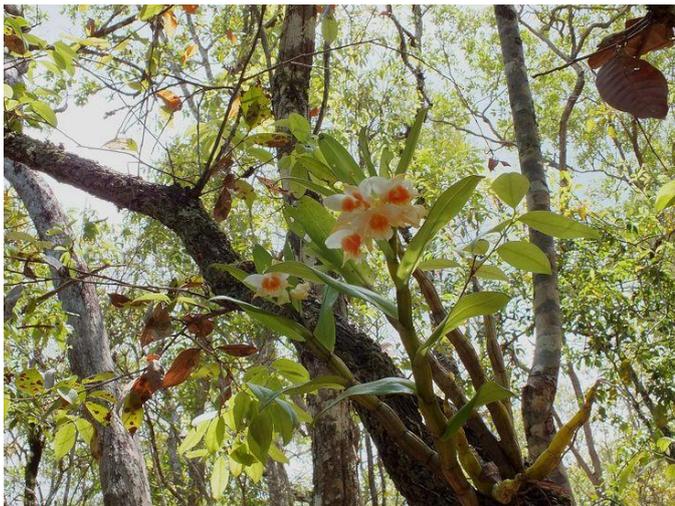
On a trip to Vietnam in 2008, we visited Dalat and saw *Dendrobium bellatulum* growing on pine trees in secondary forests. Plants were small and solitary with only a few on each tree.

While like both *Dendrobium luekelianum* and *Dendrobium christyanum*, *Dendrobium bellatulum* differs in the raised callus on the lip with the yellow apex. Its common name is the Enchanting Dendrobium. In China, it is known as Ai Shi Hu. The synonym in use is *Dendrobium bellatulum* var. *cleistogamia* Pradhan 1979 that refers to the albinistic variant.



Photos source: http://bluenanta.com/orchid/57180/species_detail/?tab=gal

Dendrobium cariniferum Reichb.f. 1869 SECTION *Formosae* can be found in the Chinese Himalayas, Assam, Myanmar, Thailand, Cambodia, Laos and Vietnam as a miniature sized, hot to cool growing epiphyte in humid, mossy, mixed and coniferous forests on mossy branches of old, dwarf, gnarled trees and primary montane forests at elevations at 450-1,800m. It has thick, hirsute stems with 4-6, broad, hirsute beneath leaves. Flowering in spring on very short, apical inflorescences with 2-5 hirsute flowers, it has a pleasant orange fragrance.



In situ photo source: <https://travaldo.blogspot.com/2018/01/dendrobium-cariniferum-care-and-culture.html>

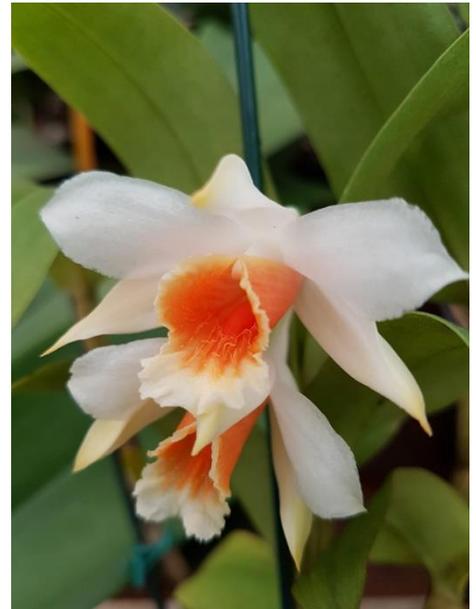


Photo source: http://bluenanta.com/orchid/57326/species_detail/?tab=gal

Its common name is the Keel-Carrying Dendrobium. In Thailand, it is known as Ueang sae dong - Ueang ngoen daeng - Ueang kachok - Ueang tueng, and in China, as Chi E Shi Hu. Synonyms in use are *Callista carinifera* (Rchb.f.) Kuntze 1891; *Dendrobium cariniferum* var *lateritium* Rchb.f

Dendrobium catenatum Lindley 1830 SECTION *Formosae*. This species can be found in China, Korea and Japan in moderately damp montane forests as a small to medium sized, cool to warm growing epiphyte, and as a lithophyte at 300-1,600m. It is principally marketed as *Dendrobium tosaense*. It has long, clustered, terete, pendant or erect, pale green stems carrying to 12, ligulate-lanceolate, acute, deciduous leaves. Flowering from mid-winter to mid-spring,

flowers are borne on lax, 2-6cm few to several flowered inflorescences that arise from the nodes near the apex of 2- to 3-year-old leafless canes. *Dendrobium officinale* and *Dendrobium candidum* are similar and often listed as synonyms. Several colour variants are known.



In situ photo source: <http://cleyera08.pixnet.net/blog/post/448357808-%E9%BB%83%E8%8A%B1%E7%9F%B3%E6%96%9B-%E9%BB%83%E7%9F%B3%E6%96%9B%29>



Its common name is the Chained Dendrobium. In Japan, it is known as Kibana-seki-koku, and in China Huang Shi Hu. Synonyms in use are *Callista stricklandiana* (Rchb.f.) Kuntze 1891; *Dendrobium funiushanense* T.B.Chao, Z.X.Chen & Z.K.Chen 1992; *Dendrobium huoshanense* Z.Z.Tang & S.J.Cheng 1984; *Dendrobium pere-fauriei* Hayata 1916; *Dendrobium stricklandianum* Rchb.f. 1877; *Dendrobium tosaense* Makino 1891; *Dendrobium tosaense* var. *chingshuishanianum* S.S.Ying 1989; *Dendrobium tosaense* var. *pere-fauriei* (Hayata) Masam. 1933

Photo source:
http://bluenanta.com/orchid/58561/species_detail/?tab=galas

Dendrobium christyanum Rchb. f. 1882 SECTION *Formosae*. Growing as miniature to small sized, warm to cool growing, miniature epiphyte in highland primary cloud forests at 800-1,600 m in northern Vietnam and Thailand, and southwestern China, this species has caespitose, subclavate, abbreviated pseudobulbs enveloped by 3-4, pellucid sheaths covered in black hairs and carries 2 black hair covered lanceolate, obtuse, obliquely bilobed apically leaves towards the apex of the pseudobulbs as can be seen in the following in situ photo. Fragrant flowers in late spring and summer occur on either terminal or lateral, very short, single flowered inflorescences that arise from the apex or on the sides of old and new pseudobulbs.



Photos source:
<https://travaldo.blogspot.com/2018/01/dendrobium->



christyanum-care-and-culture.html

Dendrobium christyanum is similar to both *Dendrobium luekelianum* and *Dendrobium bellatulum* but differs as it possesses a flat central callus on the lip with a yellow or white apex.

Its common name is Christy's Dendrobium named after an 1800's English orchid enthusiast. In China, it is known as Mao Qiao Shi Hu, and in Thailand as Uang Sae Doi Pui. The synonym in use is *Dendrobium margaritaceum* Finet 1901

Dendrobium cruentum Rchb.f 1884 SECTION *Formosae*. This species is considered rare and endangered in the wild due to massive over-collection and deforestation and accordingly, is listed in Appendix I of CITES. Fortunately, it is now readily available in flask from artificial propagation. It is found in Myanmar, Thailand and Vietnam as a small to medium sized, hot to warm growing, epiphytic species below 1,000m in open forests where it can be found on smaller trees.

Dendrobium cruentum has erect pseudobulbs that are swollen basally, with hairy leaf sheaths carrying many, deciduous, elliptic-oblong, leathery leaves that are hairy on the underside and are spaced all along the stem. Flowering occurs in spring through autumn on axillary, short, 1-2 flowered inflorescences with faintly fragrant, longlasting flowers that arise from the nodes on the stem in between leaves at the upper apex of the leafed pseudobulb.

Its common name is the Blood Red Dendrobium, while in Thailand it is known as Ueang nok kaeo. This is clearly demonstrated by the following photo. Photo source: <http://orchidsaustralia.com.au/index.php/Den-cruentum>



Once again, flower colour is quite variable.



Photo source
<https://www.flickr.com/photos/18636848@N08/3037228438>



The synonym in use is *Callista cruenta* (Rchb. f.) Kuntze 1891

Photo source: <http://www.rv-orchidworks.com/orchidtalk/cattleyas-vandas-dendrobiums-bloom/35366-dendrobium-cruentum.html>

Dendrobium senile Parish ex Rchb.f 1865 SECTION *Formosae* comes from Myanmar, Thailand and Laos where it can be found as miniature, warm to cool growing epiphyte at 500-1,200m. It has distinctive sub erect, reclining to creeping,



hairy, succulent-like pseudobulbs and with 2-6, ovate-lanceolate, alternate, semi-deciduous leaves. Flowering in spring and summer, the lemon fragrance 1 to several flowers are borne on short inflorescences that arise from the upper nodes of the leafed and leafless canes. Its common name is the White-Haired Dendrobium, while in Thailand, it is known as Ueang chani. This species is known to be difficult to maintain over time in cultivation

Photo source:
<https://www.celaorchidee.it/shop/botaniche/dendrobium-senile/>

Synonyms in use are *Callista senilis* (Parish & Rchb. f.) Kuntze 1891; *Callista senilis* (Parish & Rchb. f.) Brieger 1981

Dendrobium senile in situ Thailand

Photo source:

<http://www.orchidspecies.com/orphotdir/densenile.jpg>



Dendrobium trigonopus Rchb. f. 1887 SECTION Formosae

This small sized, hot to cool growing epiphyte is found in Myanmar, Thailand, southwestern China, Laos and Vietnam in remnant forests on tree trunks at 300-1,500m. It has tufted, fusiform, sulcate, shiny purplish brown, stems carrying 1 to 4, subterminal, ligulate or oblong, thick, papery, dull green, acute leaves. Flowering late winter and early spring, 1-4 waxy, long lasting, fragrant flowers with minute bracts are borne on very short racemes that arise from the nodes near the apex of both leafy and leafless canes. This species has also proven difficult to maintain in cultivation.



Photo source: <https://www.seattleorchid.com/Dendrobium-trigonopus-p/qsndend-trigonopus.htm>

Dendrobium trigonopus in situ

Photo source:

http://bluenanta.com/orchid/59341/species_detail/?tab=gal



Its common name is the Triangular Column Foot Dendrobium. In Thailand, it is known as Kam Pak Gai - Ueang kham liam (translated - the Golden Chicken's Beak Orchid). In China, it is known as Chi Geng Shi Hu. Synonyms in use are *Callista trigonopus* (Rchb. f.) Kuntze 1891; *Dendrobium velutinum* Rolfe 1895



Dendrobium wattii (Hook. F) Rchb.f 1882 SECTION Formosae

Found as an epiphyte in dense forests on tree trunks at 1,500-2,600 m from China, Myanmar, northern Thailand, northwest India, northern Laos and Vietnam China through Burma and northern Laos, it is another member of the nigro-hirsute (black haired) section of Dendrobium and is noted for its long-lasting flowers. It is a miniature to medium sized, cool to cold growing epiphyte with slender, cylindrical canes carrying 4 to 8, narrowly linear, leathery leaves with the leaf sheaths having fine black hairs. Blooming in the spring on short inflorescences arising near the apex of leafless canes, short racemes carry 2 to 3 flowers. The leafless canes rebloom for several years.

Photo source: http://www.orchidroots.com/orchid/59489/species_detail/?tab=gal



Its common name is Watt's Dendrobium after an English botanist and orchid collector in India in the late 1800's. In China, it is known as Gao Shan Shi Hu. Synonyms in use are *Callista wattii* (Hook.f.) Kuntze 1891; *Dendrobium cariniferum* var. *wattii* Hkr.f; *Dendrobium congianum* Aver.2016; *Dendrobium evrardii* Gagnep. 1930

In situ photo by Peter Williams

Dendrobium williamsonii J. Day & Rchb. f. 1869 SECTION *Formosae*

This species is also in the nigro-hirsute group and is found in the Chinese Himalayas, Assam India, Myanmar, Thailand, and Vietnam in forests on tree trunks at 600-1,400 meters as a small sized, warm to cool growing epiphyte. It has upright, elongate-fusiform, velvety stems that are many leaved towards the apex carrying, oblong or lanceolate, velvety, obscurely bilobed apically leaves with leaf sheaths that are densely covered with black hairs. Flowering in the late winter and early spring, 1-3 waxy, fragrant flowers are borne on very short, black hairy racemes that arise from near the apex of the newest maturing cane.



Photo source: http://bluenanta.com/orchid/59503/species_detail/?tab=gal

Its common name is Williamson's Dendrobium named after an English orchid collector in India in the 1800's. In China, it is known as Hei Mao Shi Hu. Synonyms in use are *Callista lubbersiana* (Rchb. f.) Kuntze 1891; *Callista williamsonii* (J. Day & Rchb. f.) Kuntze 1891; *Dendrobium lubbersianum* Rchb.f 1882

In situ photo source: <http://www.flickrriver.com/photos/biozcw/14496122802/>



General Culture Notes for *section Formosae*

As noted earlier, *Dendrobium* species in *section Formosae* have a deserved reputation for being difficult to grow and sustain over the long term in cultivation. However, some growers do not share this experience and it is due to their understanding of the natural environment and habitat from which the species originates. This involves a resting period where the species should be kept drier, although this rule does not apply to all species in the section. Generally, this drier period occurs in their natural habitat in winter, so these species need protection from winter rainfall, and will benefit from some warmth as winter in their habitat during local winter will be dry, but not cold and dark as can be experienced in Western Australia. The majority of species in this section are epiphytes, so can be grown in media in pots, or if you are able to maintain humidity in summer, on slab mounts. The media should be able to hold sufficient moisture between watering to prevent the plant from becoming dehydrated, but not stay soggy. Remember, the majority of this section's species are epiphytes and their roots are exposed to air and completely dry between rain periods. You will find that as your plants grow new canes; most often the active roots will be outside the pot in the air. Therefore, if you are growing in a container, the media should allow the free movement of air through the container. Choose a media of consistent size (larger media for species with larger roots, small media for species with very fine roots). If it is part of your orchid culture, you could include perlite or styrofoam/polystyrene to provide air spaces. Generally *Dendrobium* species prefer slightly acid media about pH 6.7. All of this is important as the species in this section are susceptible to root loss if the media breaks down and stays wet, is affected by salt build-up, or is invaded by weeds or fungal/bacterial pathogens.

The Genus *Dendrobium* – part 2

SECTION *Latouria*

The fifty or so species in section *Latouria* are primarily found in New Guinea, although some members are found in the Philippines and Samoa. They are principally epiphytic and can be found from sea level to high altitude, usually in areas of high, year-round rainfall. The flowers are long lasting and range from small to large with the latter being popular for hybridisation. Early collection and identification of these species from the wild means that artificially propagated plants of the more showy species are readily available at reasonable prices. These less well-known species often come from very inaccessible habitats that are difficult to replicate, and are therefore uncommon in collections. Some of the more frequently available *Dendrobium* species in this section are:

Dendrobium aberrans
Dendrobium alexandrae
Dendrobium atrovioleaceum
Dendrobium bifalce
Dendrobium convolutum
Dendrobium engae
Dendrobium eximium
Dendrobium finisterrae
Dendrobium forbesii
Dendrobium johsoniae
Dendrobium macrophyllum
Dendrobium polysema
Dendrobium punamense
Dendrobium rhodostictum
Dendrobium shiraishii
Dendrobium spectabile
Dendrobium tapiniense

Dendrobium aberrans Schltr. 1912 SECTION *Latouria*

This is a mini-miniature to miniature sized, hot to cool growing epiphyte from eastern Papua New Guinea where it grows on tree fern and shady tree trunks in mossy forests at 300-1,900m. It has clustered, spherical to spindle-shaped, purple, olive-yellow or glossy green pseudobulbs with 3 to 4 nodes below oval, leathery, spreading, 2 to 3 apical leaves.

Flowering throughout the year, short, wiry, erect or pendant inflorescences arising from the apex of old and new canes carry 2 to 6 white often marked with pink on the column flowers in a cluster. The flowers are long-lasting, are sometimes fragrant and can be produced on very small plants.

Photo source:

<https://www.orchidweb.com/orchids/dendrobium/species/dendrobium-aberrans>



Dendrobium aberrans on slab mount

Photo source:

<https://www.aeorchids.com/orchid-photography/asian-pacific-dendrobium/dendrobium-aberrans/>



Its common name is the Deviating *Dendrobium*, and the synonym in use is *Sayeria aberrans* (Schltr.) Rauschert 1983

Dendrobium alexandrae Schltr. 1912 SECTION *Latouria*

Found in Papua New Guinea as a medium to large sized, cool growing epiphyte on high branches of moss-covered trees in lower montane and cool mist forests at 900-1,200m in high light, exposed positions. Andre Millar says that often she found this species in the highest trees in the forest. The canes carry 2 to 3 apical, elliptic, bluish green, erect or spreading leaves. Autumn flowering occurs on axillary, racemose, laxly, several flowered inflorescences arising from the nodes at the apex of the pseudobulb. The flowers are predominantly white with heavy spotting on the sepals and petals with a large pronounced lip coloured red and green. This species was once thought to be lost, or perhaps a hybrid of

Dendrobium spectabile, but the recent rediscovery of substantial populations in some locations has revealed that this is not so.



Photo source:

<https://travaldo.blogspot.com/2018/01/dendrobium-alexandrae-care-and-culture.html>

Its common name is Alexandra's Dendrobium named after Schlechter's wife. Synonyms in use are *Latourea alexandrae* [Schltr.] Breiger 1981; *Latourorchis alexandre* [Schltr.] Breiger 1981; *Sayeria alexandrae* (Schltr.) Rauschert 1983

Dendrobium atrovioleaceum Rolfe 1890 SECTION *Latouria*

Found in Papua New Guinea and surrounding islands at 200-800m, *Dendrobium atrovioleaceum* is a medium sized, hot to warm growing epiphyte on large tree trunks in rainforest. Andre Millar writes that this species was still plentiful on the island of New Ireland in light forests, although was much less plentiful on the mainland where many thousands had been taken from the wild by collectors for the British and German nurseries before 1900. It is also found in Irian Jaya in the Cyclops Mountains near Jayapura. The average day temperature is 24-28°C and night 20-22°C throughout the year, a daily variance of only 4-6°C, and relative humidity is 70-80%.

It has a clavately fusiform, deeply sulcate, greenish when young, brownish with age stem carrying 2 to 4 apical, ovate-oblong, thick, coriaceous, obtusely obtuse apically, dark green above and paler below leaves. Flowering throughout the year, although most often in autumn through spring, 6-8 long-lasting (up to 3 months) fragrant, heavy textured nodding flowers are borne on short axillary racemes arising from just below or at the apex of new or older canes.

Its common name is the Black Blood-Red Dendrobium, and synonyms in use are *Dendrobium eustachyum* Schlechter 1923; *Dendrobium macgregorii* F. Muell. & Kraenzl. 1894; *Latourea atrovioleacea* [Rolfe] Breiger 1981; *Latourorchis atrovioleacea* [Rolfe] Breiger 1981; *Sayeria atrovioleacea* (Rolfe) Rauschert 1983;



Photo source:

http://bluenanta.com/orchid/57132/species_detail/?tab=gal

Dendrobium bifalce Lindl. 1843 SECTION *Latouria* is found in the Lesser Sunda Islands, Moluccas, the Bismark Islands, New Guinea, the Solomon Islands and Queensland in coastal or riverine forests at sealevel to 800m where it grows in rainforests on trees and boulders in brightly lit, humid environments. It is a small sized, hot growing epiphyte with stout, apically thickening, 5 to 7 noded stems carrying 2 to 4, coriaceous, suberect, elliptic-oblong, obtuse leaves. Flowering in autumn and winter, up to 10 small fleshy flowers are borne on terete, stout inflorescences with distinct triangular-ovate, apiculate floral bracts. Plants are often bleached yellowish green by the sun. Andree Millar wrote that this species "is the most common of all *Latoureas*, and on the most common orchids in the New Guinea lowlands". She

says that they collected large clumps of plants in the 1970s, sometimes with as many as 100 or more plants in the clump. She noted that the flower colour varied from apple green with purple streaks to brownish green.



Photo source:

https://orchid.unibas.ch/index.php/en/?option=com_content&view=article&id=3&SearchResultID=2042605/Dendrobium/bifalce/Lindley_John&setLang=en-GB

In situ photo source:

http://keys.trin.org.au:8080/keys-server/data/08090a09-0d0e-410b-860c-020705070e0e/media/Html/Leioanthum_bifalce.htm



Synonyms in use are *Bulbophyllum oncidiochilum* Kraenzl. 1894; *Callista bifalcis* (Lindl.) Kuntze 1891; *Dendrobium breviracemosum* F.M. Bailey 1899; *Dendrobium chloropterum* Rchb.f. & S.Moore 1878; *Doritis bifalcis* (Lindl.) Rchb.f. 1860; *Latourea oncidiochila* (Kraenzl.) Kraenzl. 1894; *Leioanthum bifalce* (Lindl.) M.A. Clem. & D.L. Jones 2002; *Sayeria bifalcis* (Lindl.) Rauschert 1983. Its common name is the Two Sickles Dendrobium, and in Australia it is known as the Native Bee Orchid

Dendrobium convolutum Rolfe 1906 SECTION *Latouria* is found in northern Papua New Guinea at sealevel to 650m as hot to warm growing epiphyte in rainforests near the coast. It is a small sized species with yellow stems that have 4-5 nodes beneath 3 apical, elliptic-lanceolate leaves. Flowering in late spring and early summer, 2-4 long-lasting flowers are borne on 8-12 cm axillary, suberect, racemose inflorescences arising from the apex of leafless canes and below the leaves on canes carrying leaves.



Photo source: http://bluenanta.com/orchid/57475/species_detail/?tab=gal

The flowers of *Dendrobium convolutum* resemble those of *Dendrobium macrophyllum* but are smaller, distinctively coloured, lack any hairs on the outer surface and have a distinctive callus on the lip. The species was originally described by Rolfe from a plant sent to him by F. Sander which arrived with plants of *Dendrobium atrovioleaceum*. As the latter is found only in Milne Bay Province, this may well be the type locality of *Dendrobium convolutum* as well.

Its common name is the Convoluted Dendrobium, and the synonym in use is *Sayeria convoluta* (Rolfe) Rauschert 1983

Dendrobium engae T.M. Reeve 1979 SECTION *Latouria* while only relatively recently described is widespread throughout highland Papua New Guinea where it can mostly be found growing epiphytically on larger branches of *Nothofagus* trees growing in montane forests on ridges at over 2000m, although is also known to be growing up to 3,500m. It is cool-cold growing species with stout, erect, yellowish, 10 noded pseudobulbs carrying 3 to 5 apical,



spreading to suberect, thick, leathery, oblong, glossy, dark green leaves with a rounded apices. Flowering in late spring, few to many wide open, long-lasting, sweetly scented flowers are borne on 25cm inflorescences.

The flowers have cream-white sepals; greenish white petals and a labellum that is greenish yellow or yellow, heavily spotted maroon on midlobe and veined maroon on side-lobes with white callus. When first open, it is a translucent green colour that becomes cream over a few days.

Photo source:

https://www.flowershots.net/Dendrobium_species10.html

Its common name is the Enga Dendrobium named after the Papua New Guinea province. While not endangered, this species is like many others in Papua New Guinea is under threat from deforestation.

Dendrobium eximium Schltr. 1906 SECTION *Latouria* is found in Papua New Guinea and Irian Jaya. In northern Papua New Guinea, they grow on mossy trees in montane forests on the slopes of the Torricella Department both north and south at 600 m., and in Irian Jaya in the mountains of Went at 400 m. These regions experience year-round rain and high humidity, and this medium sized species is a hot to warm growing epiphyte found on moss covered trees. Canes have up to 5 nodes below 2 apical, oblong, spreading leaves. Flowering in spring and in autumn on few to many flowered racemose inflorescences that arise from nodes near the apex of the canes, it has 2-7 large, 4.5-7.6 cm showy flowers. The white flowers sometimes have yellow petals of outer whorl, and on the lower side, are covered with hairs. The inner whorls are very wide. The side plots of the curved lip are decorated with lilac, purple or red-brown stripes, and are curved around the spine. *Dendrobium eximium* has the largest flowers of all the setose species of section *Latouria*. In flower colour and petal shape it closely approaches *Dendrobium forbesii* but differs in its broader petals, sepals which are much hairier on their outer surfaces and lateral sepals which lack lamellate keels on their mid veins. The lip also differs in having broader side-lobes and a smaller apiculate midlobe. The mentum (chin-like projection consisting of the column foot and the bases of the lateral sepals) is reminiscent of that of *Dendrobium finisterrae*. It is also similar to

Dendrobium rhodistichum but differs by the hairs found on the exterior of the sepals.

Its common name is the Extraordinary Dendrobium. Synonyms in use are *Dendrobium bellum* J.J. Sm. 1910; *Dendrobium wollastonii* Ridl. 1916; *Sayeria eximia* (Schltr.) Rauschert 1983

Photo source:

<http://www.ourshopfront.com/kabi/html/Latouria/Dendrobium%20eximium.php>



Dendrobium finisterrae Schltr. 1912 SECTION *Latouria* Found in Papua and New Guinea as a large sized, cool to cold growing epiphyte found on moss covered trees in mist forests at 900- 2,100m. The clustered, somewhat flattened, orange yellow canes carry 2 to 3, oblong-elliptic, suberect leaves. This species flowers in winter, spring and summer on erect 8-10 flowered inflorescences arising from near the apex of the canes with faintly fragrant flowers. In common with other species in this section, the flowers do not open widely and are often facing downwards.

The incurved rather nose-like mentum, very hairy sepals and hook-like ligule on the column foot serve to distinguish *Dendrobium finisterrae* from the other species with hairy ovaries. It is probably most closely allied to *Dendrobium eximium*, both having a similarly shaped mentum, but in the latter the petals are very much larger than the dorsal sepal and are unspotted. The flowers of *Dendrobium finisterrae* have smaller creamy petals spotted towards the base and its flowers do not open at all widely. *Dendrobium finisterrae* var. *polystictum* has more intense spots and colouration.



Photo source:
<http://www.ourshopfront.com/kabi/html/Latouria/Dendrobium%20finisterrae.php>



In situ photo source:
<http://www.wildborneo.com.my/thumbs.php?k=Dendrobium+finisterrae>

Its common Name is the End of The World Dendrobium [Finisterre Mountains of New Guinea] and synonyms are *Dendrobium melanolasium* Gilli 1980 publ. 1983; *Sayeria finisterrae* (Schltr.) Rauschert 1983

Dendrobium forbesii Ridl. 1886 SECTION *Latouria* comes from eastern Papua and New Guinea where it can be found in in moist, mossy, open mountain rainforests valleys at 900-1,500m. It is a medium sized, warm to cool growing epiphyte with basally slender, clavate, orange stems carrying 2 apical, elliptic-oblong leaves, Flowering in summer through to early winter, the flowers are borne long, erect racemes with long acuminate floral bracts. The inflorescence arises from between the leaves at the apex of a new growth and carries 7-20 fragrant flowers. The backside of the sepals and ovaries are covered with fine hairs. This species is recognised as one the most attractive in the *Latouria* section. The flower colour is variable with some forms very white and others with lighter green or cream tones. Schlechter identified *Dendrobium forbesii* var. *praestans* which he believed was larger than the form described by Ridley. *Dendrobium forbesii* is readily recognised by its broad petals, sepals which are almost glabrous and lateral sepals with a broad lacerate keel on the mid-vein.



Photo source: <http://www.ecuagenera.com/Dendrobium-forbesii/en>

Its common name Forbes' Dendrobium is named for an 1800's English Orchid collector. Synonyms in use are *Dendrobium ashworthiae* O'Brien 1901; *Dendrobium eustachyum* Schltr. 1923; *Dendrobium forbesii* var. *praestans* Schltr. 1912; *Latourea forbesii* [Ridl.] Breiger 1981; *Latourorchis forbesii* [Ridl.] Breiger 1981; *Sayeria eustachya* (Schltr.) Rauschert 1983; *Sayeria forbesii* (Ridl.) Rauschert 1983

Dendrobium johnsoniae F. Muell. 1882 SECTION *Latouria* is a Papua New Guinea, Irian Jaya and Bougainville Island lowland species found at 500-1,500m as a small to medium sized, warm to cool growing epiphyte on montane forest *Casuarina* and *Araucaria* trees in high light along streams and gullies. This species has narrowly fusiform (spindle shaper – widest in the middle tapering to both ends) to 9 noded, purple, brown or green stems carrying to 4, suberect,

ovate, bilobed apically leaves. Flowering in autumn and winter (although secondary flowering can take place throughout the year) on 30cm erect, several to many lowered inflorescences carry long-lasting, pleasantly fragrant flowers arising from the nodes near the apex of both leafed and leafless canes. Some early records that showed this species as occurring in Northern Australia have been shown to be erroneous. Cribb, P. says *Dendrobium johnsoniae* is allied to



Dendrobium rhodostictum and *Dendrobium otaguroanum* but is readily distinguished by its pure white flowers veined with purple red on the side-lobes only, its rhombic petals and an elongate lip with a lanceolate midlobe.

Photo source: http://bluenanta.com/orchid/58092/species_detail/?tab=gal

Its common name, Johnson's Dendrobium is named for the daughter of a, 1800's New South Wales Pastor. Synonyms in use are *Dendrobium macfarlanei* Rchb. f. 1882; *Dendrobium monodon* Kraenzl. 1910; *Dendrobium niveum* Rolfe 1891; *Latourorchis johnsoniae* {F. Mueller} Breiger 1981 and *Sayeria johnsoniae* (F. Muell.) Rauschert 1983



In situ photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2462>

Dendrobium x 'kips special' is a natural hybrid between *Dendrobium rhodostictum* and *Dendrobium ruginosum*, and according to Laverack, Harris and Stocker 2000 can be found growing on trees along roadside cuttings on the road to Panguna mine Bougainville at 1,200-2,000m in constantly wet climatic conditions. A small plant, it has large, long-lasting (up to 3 months) flowers and grows well in cultivation. Unfortunately, I could not find any photos of this natural hybrid that I am confident are correct.

Dendrobium macrophyllum A. Richard 1834 not Lindley or Ames SECTION *Latouria* is a widely distributed species found in Java, Lesser Sunda Islands, Moluccas, the Philippines, Sulawesi, Irian Jaya, Papua New Guinea, Solomon Islands, Fiji, New Caledonia, Samoa, Santa Cruz, Vanuatu and the Caroline Islands. A medium to large sized, hot to cool growing epiphytic species can be found in habitats ranging from hot coastal primary forest jungles to cool montane forests from sea-level to 1,700m. This species has ribbed, slightly flattened, slender basal and thicker upper stems carrying 2-4, large, persistent leaves. Flowering from spring to late summer, erect 15-40 cm racemes arising from the leaf axils at the apex of the leafed canes carry up to 25 heavy textured, colour variable, delicately fragrant long-lasting flowers. This species grows into large clumps over time in its native habitat.



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2496>

Dendrobium macrophyllum is the most widespread species in Section *Latouria* and is variable in flower size and colouration. However, it may be readily distinguished from all allied species with setose ovaries (covered with setae or bristles) by usually 3-leaved pseudobulbs, oblong-elliptic leaves, narrow petals, and broad side-lobes of the lip. The closely allied *Dendrobium polysema* has more widely open flowers and tapered lip side-lobes



In situ photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2496>

Its common name is the Large-Leafed Dendrobium, while in New Guinea it is known as the Pastor's Orchid. Many synonyms exist for this species. These include *Callista gordonii* (S. Moore) Kuntze 1891; *Callista macrophylla* (A. Rich.) Kuntze 1891; *Callista veitchiana* (Lindl.) Kuntze 1891; *Dendrobium brachytecum* F. Mueller & Krzl. 1894; *Dendrobium ferox* Hassk. 1835; *Dendrobium gordonii* S. Moore Ex Baker 1883; *Dendrobium lucae* F. Mueller 1910; *Dendrobium macrophyllum* var. *huttonii* H.J. Veitch 1873; *Dendrobium macrophyllum* var. *subvelutinum* J.J.Sm. 1911; *Dendrobium macrophyllum* var. *ternatense* (J.J.Sm.) P. O'Byrne & J.J. Wood 2010; *Dendrobium macrophyllum* var. *veitchianum* (Lindl.) Hook.f. 1867;

Dendrobium musciferum Schlechter 1912; *Dendrobium palawense* Schlechter 1914; *Dendrobium psyche* Krzl. 1910; *Dendrobium sarcostemma* Teijsm. & Binn 1866; *Dendrobium sarcostemma* Teijsm. & Binn. 1830; *Dendrobium ternatense* J.J.Sm. 1909; *Dendrobium tetradon* var. *vanvuureonii* J.J.Sm. 1920; *Dendrobium tomohonense* Krzl. 1910; *Dendrobium veitchianum* Lindley 1847; *Latourea macrophylla* (A.Rich.) F.G. Brieger 1981; *Latourea muscifera* (Schltr.) F.G. Brieger 1981; *Latourorchis macrophylla* [A.Rich.] Breiger 1981; *Latourorchis muscifera* (Schltr.) F.G. Brieger 1981; *Sayeria macrophylla* (A. Rich.) Rauschert 1983; *Sayeria muscifera* (Schltr.) Rauschert 1983; *Sayeria palawensis* (Schltr.) Rauschert 1983; *Sayeria psyche* (Kraenzl.) M.A. Clem. & D.L. Jones 2002

Dendrobium polysema Schlechter 1906 SECTION *Latouria* is a small to large sized, hot to cool growing epiphyte found in eastern Papua New Guinea at 1,200-1,900m, and in the Solomon Islands, Bougainville Island, the Santa Cruz Islands, and Vanuatu at 150-750m. This mist forest species is found on mossy tree trunks and main branches. Erect, 3-5 noded yellow stems carry 2 elliptical-oblong, erect to spreading leaves. Flowering in autumn through late winter and spring, flowers are borne on erect, densely flowered racemes that arise from the apex of a cane. The open, flattened heavy substance flowers are long lasting with hairy backs to petals and sepals. Unlike some others in this section, the flowers are clearly separated rather than tightly bunched .

Dendrobium polysema is closely allied to the widespread *Dendrobium macrophyllum* but can be readily distinguished by its two-leaved pseudobulbs, broader elliptic leaves and the tapering side-lobes and the heavily spotted midlobe of the lip. The flowers open more widely with the petals often reflexed and the midlobe deflexed giving the flower a flat appearance.

Its common name is the Many-Spotted Dendrobium. Synonyms in use are *Dendrobium macrophyllum* A. Richard var *stenopterum* Rchb.f 1888; *Dendrobium polysema* var. *pallidum* Chadim 1964; *Dendrobium pulchrum* Schlechter 1912; *Dendrobium stenopterum* (Rchb.f.) Chadim 1972; *Sayeria polysema* (Schltr.) Rauschert 1983



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2574>

Dendrobium punamense Schltr. 1905 SECTION *Latouria* can be found in the Papua New Guinea, Manus, New Britain, New Ireland, Bougainville and Guadalcanal Islands. This unusual member of the *Latouria* section is a miniature sized; warm growing epiphyte or occasional lithophyte that is found in deep shade on the trunks and branches of moss-covered rainforest trees at 25 to 500m. It has erect to pendulous, 3-6 noded; green to olive green stems carrying 2, apical, oblong-lanceolate, basally twisted leaves. Flowering in winter, the short inflorescence carries few flowers. *Dendrobium punamense* is most closely allied to *Dendrobium euryanthum*, sterile specimens of the two being indistinguishable. However, it differs in flower colour and in lip shape, the side-lobes being as long as the midlobe.



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2585>

Its common name is the Punam Dendrobium. Synonyms in use are *Dendrobium waterhousei* Carr 1934; *Sayeria punamensis* (Schltr.) Rauschert 1983



Photo source: <https://www.flickr.com/photos/98235793@N04/23340280846>

Dendrobium rhodostictum F. Muell. & Kraenzl. 1894 SECTION *Latouria* is found from eastern Papua New Guinea to Bougainville Island as a warm to cool growing epiphyte on montane rainforest *Castanopsis* and *Nothofagus* trees or as a terrestrial on steep, wet moss-covered slopes at 800-1,200m. A small to medium sized species, it has basally fusiform to apically swollen, yellow, 3-5 5 noded stems with 2-4, dark green, persistent, leathery leaves. Flowering in autumn and spring, very short racemes carry 3-8 waxy, fragrant flowers. This species is similar to *Dendrobium eximium* but differs in the lack of hairs on the exterior of the sepals. The defining characteristic for *Dendrobium rhodostictum* is the broad lip, which is three-lobed, apiculate, difficult to flatten that has rose-purple spots outside on the lateral margins and similar coloured stripes on the inside of the lip, both which can be seen through the reverser side. Specimens collected from New Britain have somewhat larger flowers with a more markedly three-lobed lip than those from New Guinea or Bougainville, and have pseudobulbs which are somewhat swollen along their entire length. These differences might warrant recognition at sub-species level.



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2597>

Its common name is the Red-Spotted Dendrobium Synonyms in use are *Dendrobium madonnae* Rolfe 1903 and *Sayeria rhodosticta* (F. Muell. & Kraenzl.) Rauschert 1983.

Dendrobium shiraishii T. Yukawa & M. Nishida 1992 SECTION *Latouria* can be found in western Papua New Guinea as a warm to cool growing epiphyte, terrestrial or lithophyte in lower montane forests at 500-1,500m It has greenish brown, clustered, grooved stems that are apically swollen carrying, 2-4 leathery, dark green, elliptic-oblong leaves. While I did not find published in situ flowering period data, it is likely to be autumn. Terminal racemose inflorescences to 40 cm long carry several long-lasting, wide-open flowers.



Dendrobium shiraishii is closely related to *Dendrobium macrophyllum* from which it differs in the striking colour pattern and in the callus which is almost forked at the apex. Only recently described and said to be discovered by Shigeru Shiraishi, this species was known to past Dutch residents of New Guinea. A photograph of a plant collected by Stüber was published in 1935 in the journal *De Orchidee* 4: 287. More recently, in 1973 van Bodegom illustrated and informally described this species as a nameless variety of *Dendrobium macrophyllum*, recommending that it be regarded as a new species. It differs from *Dendrobium macrophyllum* as it has somewhat thicker, much darker stems, the inflorescence that arises from the apex of the stem. While some authors regard it as a natural hybrid, it has been accepted by the RHS.

Photo source:
https://orchids.fandom.com/wiki/Dendrobium_shiraishii

Its common name is Shiraishi's Dendrobium named after its finder, a Japanese orchid enthusiast and author.

Dendrobium spectabile (Blume) Miq. 1859 SECTION *Latouria* is the type species for the Section, and is probably the best known *Latouria* Dendrobium. Found in Papua New Guinea and the Solomon Islands, *Dendrobium spectabile* is a spectacular, medium to large sized, hot growing epiphyte living in primary rainforests, lowland swampy forest, mangroves, lower montane forest and moss forests, or on planted Coconut, *Casuarina* and rain trees (*Samanea saman*) in urban areas at 300-2,000m although most often found from 300-500m. It can also be found as an occasional lithophyte on rocks and on ridge tops where it can be found growing on the surface of the ground in thick moss and peat. The plants survive exposure to high light and hot temperatures at lower elevations, but they are generally more abundant in cool, shady locations at higher elevations.



Photo source: <https://sborchidshow.com/section129-dendrobium-spectabilemarysgiftam-aos/>

Semi globose (shaped like half a sphere) at the base, the up to 8 noded stems carry 5 apex, lanceolate to ovate, coriaceous, obtuse leaves. This species flowers in winter and early spring on axillary 20- 40cm few to many flowered racemes with minute, oblong bracts arising near the apex of leafed mature canes. An albinistic form *Dendrobium spectabile* fma *aureum* *Dendrobium spectabile* is allied to *Dendrobium alexandrae* but is easily recognised by the very undulate flower segments and the longer lanceolate lip midlobe which is striped with purple rather than being spotted.

Its common name is the Grand Dendrobium. Synonyms in use are *Callista spectabilis* (Blume) Kuntze 1891; *Dendrobium spectabile* fma. *aurea* Christenson 2006; *Dendrobium tigrinum* Rolfe ex Hemsl. 1891; *Latourea spectabilis* Blume 1849; *Latourorchis spectabile* [Bl.] Breiger 1981; *Sayeria spectabilis* (Blume) Rauschert 1983

Dendrobium tapiniense T.M. Reeve 1980 SECTION *Latouria* is a medium to large sized, cool growing epiphyte found in a restricted area of the central highlands of Papua New Guinea at 1,500 to 2,000m. This species can be found high in the branches of rainforest trees in a habitat of cool nights, warm days, constant rainfall and high humidity. It has stocky, furrowed, basally tapered noded stems carrying 2, elliptic, apical leaves. Flowering occurs on racemes that arise from the apex of the cane in mid-summer. The 10-15cm, several flowered inflorescences carry longlasting, stiff, fleshy flowers.



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2650>

Dendrobium tapiniense is a most distinctive species which, in many ways, resembles some of the species with hairy flowers such as *Dendrobium macrophyllum* A. Rich. and *Dendrobium finisterrae* Schltr. However, its flowers are entirely glabrous, and it is readily recognised by its heavily spotted sepals and petals, and by its lip which has a distinctive callus and very undulate margins.

Its common name is the Tapini Dendrobium after a town in Papua New Guinea.

Dendrobium montis-yulei Kraenzl (previously *Dendrobium terrestre* J.J.Sm. 1911) SECTION *Latouria* can be found in Papua New Guinea and the Bismark archipelago as a small to medium sized, cool to cold growing terrestrial or epiphyte in mossy montane forests and peat bogs at 1,800-2,800m. Its habitat has bright light, high air movement and humidity year-round. Clustered terete stems, 9-14 noded below the leaves that enveloped in youth by compressed sheaths carry up to 7 apical, well-spaced, shortly petiolate leaves and flower in winter, spring and autumn on terminal or subterminal erect to spreading inflorescences carrying up to 20 variable colour ranging from orange through yellow and occasionally white flowers with distinctive floral bracts. Wood suggests along with Cribb [1983] and Szalettchko that this species is synonymous with *Dendrobium montis-yulei*.



Photo source: https://www.researchgate.net/figure/above-Dendrobium-montis-yulei-cultivated-ex-PNG-Photo-Jon-Cara-Fig-19-below_fig12_328572830

Its common name and meaning are the Terrestrial Dendrobium. Synonyms in use are *Dendrobium magnificum* Schltr.; *Dendrobium terrestre* J.J.Sm., Bull.; *Dendrobium terrestre* var. *sublobatum* J.J.Sm.; *Dendrobium rhomboglossum* var. *latipetalum* J.J.Sm.; *Sayeria terrestris* (J.J.Sm.)

The species in Section *Latouria* are primarily found in New Guinea, and many grow at high altitude. These habitats range from warm through intermediate to cool generally depending on their elevation. Many of these species require year-round watering and high humidity to maintain vigorous growth. Regular application of fertiliser when temperatures permit will encourage growth and flowering. Culture can be pots or slab mounts (provided humidity can be maintained during hot dry summer conditions), however plants should not be allowed to dry out for long periods. Heavy watering is recommended to minimise salt build-up and consequent root loss. The majority of species in this section are bright light orchids, although additional shade may be required during summer months.

The next *Section* to be covered is *Phalaenanthe*. While only a small number of species, the members of this *Section* have been widely used in hybridisation to produce full-shaped cut flower and exhibition *Dendrobium* orchids. While there is some disagreement between taxonomists as the placement of *Dendrobium williamsianum* in this *Section*, for the time being I will include it. *Dendrobium bigibbum* is the type species and has been the most widely used in hybridising.

Dendrobium affine [Decais.] Steudel 1840 *SECTION Phalaenanthe* is found in Papua New Guinea, and Timor, Seram and Tanimbar Islands and the Northern Territory as a small to medium sized, hot growing epiphyte from sea level to 300m in high light, moist locations adjacent to lagoons, swamps and rainforests to the fringes with very dry habitats. It has stout, tapered to conical pseudobulbs carrying from 2-10 leathery, ovate-lanceolate to oblong leaves that are often decurved. Flowering in autumn through to spring on both leafed and leafless pseudobulbs, the slender racemose inflorescences up to 50cm in length carry successively opening long-lasting flowers that all face the same direction. Several authors treat *Dendrobium dicuphum* as synonymous with *Dendrobium affine*, a classification that is consistent with the Kew Plant Science on-line listing. The alba form is more commonly seen in cultivation, with line bred cultivars displaying broader petals and sepals more popular than the unimproved species.

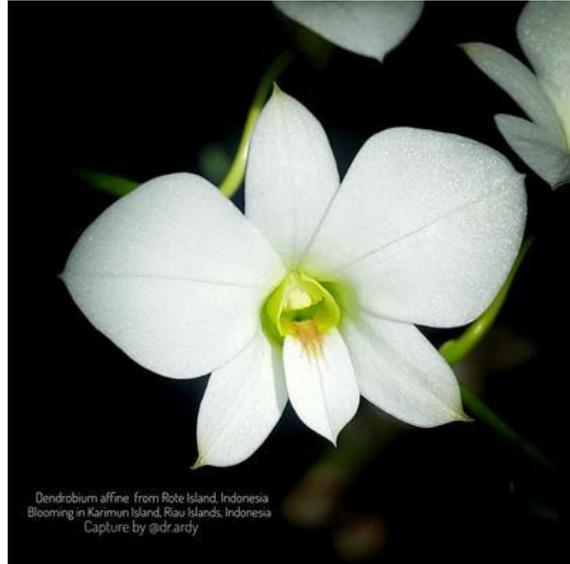


Photo source: http://bluenanta.com/orchid/57005/species_detail/?tab=gal

Photo source: <https://www.gardenweb.com/discussions/3226096/dendrobium-affine>



Its common name is the Similar *Dendrobium*. Synonyms in use are *Callista affinis* (Decne.) Kuntze 1891; *Callista leucophota* (Rchb.f.) Kuntze 1891; *Dendrobium bigibbum* Mueller not Lindley; *Dendrobium leucophotum* Rchb.f. 1882; *Dendrobium leucophotum* Rchb.f. 1882; *Dendrobium urvillei* Finet ? **Onychium affine* Decaisne 1836; *Vappodes affinis* (Decne.) M.A. Clem. & D.L. Jones 2002.

Dendrobium bigibbum Lindley 1852 *SECTION Phalaenanthe*. This horticulturally important *Dendrobium* is the type species for the *Section* and is found in Queensland and Papua and New Guinea. It is a medium to large sized, hot growing epiphyte or lithophyte that can be found in semi-arid habitats at sea level to 400m where it grows in high light. Although it is found in tropical regions, often with high summer rainfall, it is not a rainforest species but grows in exposed situations, usually attached to tree trunks such as paperbark melaleucas in savannah woodland or in vine thickets. Habitat destruction and indiscriminate harvesting by commercial plant collectors have made this species rare or extinct in some places within its range, especially in the south. The vegetative appearance of this species is highly variable but generally it has cylindrical, narrow, tapering slightly towards both ends, green or reddish-purple canes carrying 3-12, ovate or lanceolate, acute leaves. Flowering from mid-summer through winter, 2-20, large, deep to pale lilac long lasting



flowers are borne on axillary arching racemes that arise from nodes near the apex of both leafed and leafless canes. Albinistic forms are common, and enthusiasts have a wide variety of colours and sizes to choose from amongst commercially available cultivars.

Photo source:

[https://wetlandinfo.des.qld.gov.au/wetlands/ecology/components/species/?dendrobium-bigibbum#prettyPhoto\[1\]/0/](https://wetlandinfo.des.qld.gov.au/wetlands/ecology/components/species/?dendrobium-bigibbum#prettyPhoto[1]/0/)

Photo source:

http://bluenanta.com/orchid/496614/species_detail/?tab=gal

Plants of *Dendrobium bigibbum* were first collected by Dr Thomson on Mount Adolphus, a small island about 18 km north-east of Cape York. These plants were sent to a nursery in London, and in 1852 the species was described and named by the British botanist, John Lindley (1799-1865). However, it appears that it does not naturally occur near Cooktown, which is in the distribution area of the species on the Endeavour River. *Dendrobium phalaenopsis* (a synonym) was described by Robert FitzGerald, Surveyor General of New South Wales in 1880. In his description he included the words "It was obtained near Cooktown, Queensland". In December of the same year, he published a beautiful colour plate of *Dendrobium phalaenopsis* in 'Australian Orchids' with the words "obtained in northern Queensland", which clearly illustrates the species known as the Cooktown Orchid.



Photo source:

<https://www.anbg.gov.au/emblems/qld.emblem.html>

Its common name is the Cooktown Orchid, but it is also known as the two-Humped Dendrobium and the Mauve Butterfly Orchid. It is the floral emblem of Queensland.

Many synonyms exist, with a number in regular usage including *Callista bigibba* [Lindley]Kuntze 1891; *Callista phalaenopsis* (Fitzg.) Kuntze 1891; *Callista sumneri* [F. Muell.] Kuntze 1891; *Dendrobium bigibbum* fma. *compactum* (C.T. White) G. Piper 1950; *Dendrobium bigibbum* fma. *phalaenopsis* (Fitzg.) St. Cloud 1956; *Dendrobium bigibbum* fma. *superbium* G. Piper

1950; *Dendrobium bigibbum* subvar. *candidum* [Rchb.f.] Veitch 1888; *Dendrobium bigibbum* subvar. *compactum* (C.T.White) St.Cloud 1956; *Dendrobium bigibbum* subvar. *superbum* (Rchb.f.) H.J.Veitch 1887; *Dendrobium bigibbum* var. *albopurpuratum* auct. 1895; *Dendrobium bigibbum* var. *album* F.M.Bailey 1902; *Dendrobium bigibbum* var. *candidum* Rchb.f. 1878; *Dendrobium bigibbum* var. *macranthum* F.M.Bailey 1895; *Dendrobium bigibbum* var. *phalaenopsis* (Fitzg.) F.M. Bailey 1883; *Dendrobium bigibbum* var. *sumneri* [F. Mueller]F.M.Bailey 1883; *Dendrobium bigibbum* var. *superbum* Rchb.f. 1878; *Dendrobium lithocola* D.L.Jones & M.A.Clem. 1989; *Dendrobium phalaenopsis* Fitzg. 1880; *Dendrobium phalaenopsis* var. *albopurpureum* auct 1895; *Dendrobium phalaenopsis* var. *album* B.S. Williams 1894; *Dendrobium phalaenopsis* var. *album* auct. 1895; *Dendrobium phalaenopsis* var. *chamberlainianum* auct. 1894; *Dendrobium phalaenopsis* var. *compactum* C.T. White 1941; *Dendrobium phalaenopsis* var. *dellense* B.S. Williams 1894; *Dendrobium phalaenopsis* var. *highburyense* auct. 1894; *Dendrobium phalaenopsis* var. *hololeuca* auct. 1895; *Dendrobium phalaenopsis* var. *lindeniae* auct. 1902; *Dendrobium phalaenopsis* var. *rothschildianum* Kraenzl. 1892; *Dendrobium phalaenopsis* var. *rubescens* Nash 1914; *Dendrobium phalaenopsis* var. *schroederianum* Rolfe 1891; *Dendrobium phalaenopsis* var. *schroederianum* W. Watson 1891; *Dendrobium phalaenopsis* var. *splendens* auct. 1906; *Dendrobium phalaenopsis* var. *statterianum* auct. 1891; *Dendrobium phalaenopsis* var. *thundersleyense* auct. 1905;

Dendrobium sumneri F. Mueller 1867; *Vappodes bigibba* (Lindl.) M.A. Clem. & D.L. Jones 2002; *Vappodes lithocola* (D.L.Jones & M.A.Clem.) M.A. Clem. & D.L. Jones 2002; *Vappodes phalaenopsis* (Fitzg.) M.A. Clem. & D.L. Jones 2002

Dendrobium striaenopsis M.A. Clem. & D.L. Jones 1989 SECTION *Phalaenanth*e can be found on the island of Laret in the Tanimbar Group (Lesser Sunda Islands) southwest of Irian Jaya on limestone cliffs and trees at low elevations as a large size, hot growing epiphyte or lithophyte. Long slender canes carry a few persistent leaves towards to upper quarter of the stem. This species flowers in autumn on arching, many flowered inflorescences arising from apical nodes along the cane. Flower colour is variable form deep purple through purple to white as well as bicoloured flowers. This species seems to be closely related to the Torres Strait form of *Dendrobium bigibbum*.



Photo source:

<https://www.monaconatureencyclopedia.com/dendrobium-striaenopsis-2/?lang=en>

Its common name is the Striate Butterfly Dendrobium, and synonyms in use are *Dendrobium bigibbum* subsp. *laratensis* Clemesha 1978; *Dendrobium bigibbum* var. *albomarginatum* Linden 1891; *Dendrobium bigibbum* var. *albopurpuratum* auct. 1895; *Dendrobium phalaenopsis* var. *schroederianum* Rolfe 1891; *Dendrobium phalaenopsis* var. *schroederianum* Rchb.f. ex W.Watson 1891; *Vappodes striaenopsis* (M.A.Clem. & D.L.Jones) M.A.Clem. & D.L. Jones 2002

Dendrobium x superbiens Rchb.f. 1876 SECTION *Phalaenanth*e can be found in Queensland as a natural hybrid between *Dendrobium bigibbum* and *Dendrobium discolor*. It grows as an epiphyte in dry vine forests or a lithophyte on rock faces, often close to the ocean as a giant sized, warm growing species. Elongate, stems carry leaves on the upper half, and flower in in late winter and spring on erect to arching many flowered inflorescences carrying long lasting, predominantly pink flowers.



Photo source:

http://plantexplorer.longwoodgardens.org/web/oi/ocgi2.exe/INET_ECM_DisPI?NAMENUM=6572&DETAIL=1

Its common name is the Really Nice Dendrobium, and synonyms in current use are *Callista x fitzgeraldii* (F. Muell.) Kuntze 1891; *Callista x superbiens* (Rchb.f.) Kuntze 1891; *Dendrobium bigibbum* fma. *venosum* (F.M. Bailey) F.M. Bailey 1902; *Dendrobium bigibbum* var. *albomarginatum* F.M.Bailey 1891; *Dendrobium bigibbum* var. *georgei* C.T.White 1936; *Dendrobium bigibbum* var. *superbiens* (Rchb.f.) F.M.Bailey 1883; *Dendrobium bigibbum* var. *venosum* F.M.Bailey 1890; *Dendrobium x brandtiae* Kraenzl. 1906; *Dendrobium x fitzgeraldii* F. Muell. 1884; *Dendrobium x goldiei* Rchb.f. 1878; *Dendrobium x goldiei* var. *karthausianum* Rolfe 1910; *Dendrobium x gommeri* Van Geert 1879; *Dendrobium x lavarackianum* M.A.Clem. 1989; x *Vappaculum lavarackianum* (M.A.Clem.) M.A. Clem. & D.L.Jones 2002; x *Vappaculum superbiens* (Rchb.f.) M.A.Clem. & D.L. Jones 2002

Dendrobium williamsianum Rchb. f. 1878 SECTION *Phalaenanthae* can be found in the hot dry savannah, low to 300m elevation Papua and New Guinea habitat as medium to giant sized, hot growing epiphyte on small trees or high in the canopy of larger trees. The environment in which this species grows can go without rain for up to 6 months with the only moisture coming from dew. It has slender canes that carry many, oblong, persistent, two-ranked pale green leaves. Predominantly flowering in spring, but throughout the year, fragrant, waxy, longlasting flowers are borne on long arching, few to several flowered inflorescences arising from the nodes near or at the apex of the mature leafed canes.

Dendrobium williamsianum is a very distinctive relative of the famous *Dendrobium bigibbum* and is easily recognised by the high lamellae on the lip. The flowers are held in an almost horizontal position.



Photo source:

<http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2684>

Its common name is the Williams' *Dendrobium* after an 1800's SE Asia orchid collector. Synonyms in use are *Dendrobium williamsianum* var. *chanii* McCraith 1979; *Durabaculum williamsianum* (Rchb.f.) M.A.Clem. & D.L. Jones 2002

The final Section of the six main *Dendrobium* Sections is *Spathulata*, once again principally comprised of species from Papua New Guinea, Australia, the Pacific Islands and the Philippines. These generally large, predominantly hot lowland *Dendrobium* species have been widely used in hybridisation, particularly in Asia. Often found along rivers and streams on trees overhanging the water. While some are highly coloured, for example *Dendrobium carroni*, *Dendrobium cochliodes*, *Dendrobium lasianthera*, *Dendrobium lineale*, *Dendrobium nindi* and *Dendrobium taurinim*, others are predominantly white, yellow, green or brown. The rich, vibrant coloured flowers of these species have strongly influenced the hybrids produced using them as parents. Given their hot and humid habitats, as well as their large size, species in this Section are less often seen in general collections although can be found in specialist collections where the required climatic conditions can be replicated. Recent hybrid breeding has been focussed on more compact growth but retaining and enhancing the floriferous character of the species in this Section.



Dendrobium antennatum Lindley [Rchb.f.]J.J.Sm. 1843 SECTION *Spatulata* is the type species for the Section. It can be found in Queensland, Papua New Guinea, the Solomon and surrounding islands where it is epiphytic on high tree branches in coastal forest, mangrove swamps, savannah and rainforests below 1,200m. It is a small to large sized, hot to cool growing species with erect, cylindrical, basally swollen canes with coriaceous, narrowly oblong leaves. The longlasting, fragrant summer flowers are carried on lax, 3-15 flowered inflorescences that can be upright, horizontal or curved and arise from nodes near the apex of the pseudobulb.

Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2280>

Dendrobium antennatum is perhaps the most widely distributed and best-known species of Section *Spatulata* in cultivation. It can be readily recognised by its intermediate-sized white flowers with green or yellow-green erect petals and a purple-veined lip. It is most closely allied to the similarly coloured *Dendrobium stratiotes* which has much larger flowers with longer petals and to *Dendrobium strepsiceros* whose

flowers are of a similar size but green or greenish yellow and with somewhat spreading petals. *Dendrobium d'albertisii* is considered to be merely a shorter-petalled form of *Dendrobium antennatum*.

Its common name is the Antennae Dendrobium or Antelope Orchid, and in Australia, it is known as the Green Antelope Orchid. Synonyms in use are *Callista antennata* (Lindl.) Kuntze 1891; *Ceratobium antennatum* (Lindl.) M.A. Clem. & D.L. Jones 2002; *Ceratobium dalbertisii* (Rchb.f.) M.A. Clem. & D.L. Jones 2002 ; **Dendrobium d'albertisii* Rchb.f 1878

Dendrobium canaliculatum R. Brown 1810 SECTION *Spatulata* is found in northern Australia and Papua New Guinea as a miniature sized, hot growing epiphyte on Melaleuca trees at sea level to 500m. It has fusiform, enveloped in sheaths, sulcate with age canes that carry 2-6 apex subcylindrical, fleshy, grooved leaves. Flowering from midwinter through to spring, densely many- flowered racemose inflorescences arise from nodes near the apex of each old and new growth and carry pleasantly fragrant flowers.



Dendrobium canaliculatum is readily recognised by its ovoid or shortly fusiform pseudobulbs, semi-terete leaves grooved on the upper surface and dense racemes of small flowers, 18-25 mm across, with a straight mentum at a right angle to the ovary and a lip in which the callus ridges are raised on the midlobe. Its close ally is *Dendrobium carronii*, which has quite different flowers and a more restricted distribution.

Photo source: <http://www.teatreeorchid.com/>

Its common name is the Grooved Leaf Dendrobium, and in Australia, it is known as the Brown Tea Tree Orchid. Synonyms in use are *Callista canaliculata* (R. Br.) Kuntze 1891; *Callista foelschei* (F. Muell.) Kuntze 1891; *Callista tattoniana* Kuntze 1891; *Cepobaculum canaliculatum* (R.Br.) M.A. Clem. & D.L. Jones 2002;

Cepobaculum foelschei (F. Muell.) M.A. Clem. & D.L. Jones 2002; *Cepobaculum tattonianum* (Bateman ex Rchb.f.) M.A. Clem. & D.L. Jones 2002; *Dendrobium canaliculatum* var. *foelschei* (F. Muell.) Rupp & T.E. Hunt 1948; *Dendrobium canaliculatum* var. *nigrescens* Nicholls 1942; *Dendrobium canaliculatum* var. *pallidum* Dockrill 1956; *Dendrobium canaliculatum* var. *tattonianum* (Bateman ex Rchb.f.) Rchb.f. 1865; *Dendrobium foelschei* F. Mueller 1882; *Dendrobium tattonianum* Bateman 1865



Photo source: <http://www.teatreeorchid.com/>



Photo source: <https://www.flickr.com/photos/58828131@N07/10943319074>

Dendrobium carronii Lavarack & P.J. Cribb 1983 SECTION *Spatulata* can be found in northern Australia and southern Papua New Guinea as an epiphyte on *Melaleuca* trees 2-4m from the ground in marshland and open forest at sea level to 500m. This species is a hot to warm growing miniature to small sized orchid with short, swollen tapering pseudobulbs that carry few purplish, thick and semi-terete leaves. Flowering in xxx, 1-3 20cm few to several flowered erect



P. J. Cribb

inflorescences per growth from near the apex of the pseudobulb carry long-lasting fragrant flowers. *Dendrobium carronii* resembles *Dendrobium canaliculatum* but its flowers are quite distinct with purple-maroon petals that are narrower, a mentum that points backwards and often curves upwards towards the apex and a bright yellow lip with a low callus of three ridges, beaded and scarcely raised at the apex, on the oblong midlobe. Its inflorescence is characteristically produced at a right angle to the pseudobulb.

Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2322>

Its common name is Carron's Dendrobium named after its 1800's Australian discoverer and as the Pink Tea Tree Orchid. The synonym in use is *Cepobaculum carronii* (Lavarack & P.J. Cribb) M.A. Clem. & D.L. Jones 2002

In the text accompanying photos of *Dendrobium carronii* at a web site dedicated to Tea Tree orchids, <http://www.teatreeorchid.com/dendrobium-carronii.html>, the author says "that In the wild, *Dendrobium carronii* is found on the east coast of Cape York Peninsula (north of Cooktown) and into the Torres Strait and southern Papua New Guinea. Records from Papua New Guinea (according to Orchids of New Guinea) are from the Daru area (directly above the Torres Strait) as well as the Port Moresby area. In Australia, this species does not extend into the drier zones as does *Dendrobium canaliculatum* and *Dendrobium trilamellatum* var. *semifuscum*, however still favours highly lit and breezy locations in the higher rainfall regions. It is reported to grow to moderately high altitudes (700m) in both Australia and New Guinea.

Dendrobium carronii is apparently quite common in some localities, however I have not seen many plants in the wild. After scouting *Melaleuca viridiflora* forests in a number of suitable-looking locations with no luck, I was surprised to find my first colony growing almost into the twigs on fibrous-barked eucalypts. The location was on the edge of a dried up waterhole. There were no *Dendrobium canaliculatum* in the general area, although *Dendrobium johannis* and *Dockrillia rigida* grew on various hosts (including *Melaleuca viridiflora*) in the denser patches nearby". This site provides some helpful advice on growing this said to be challenging species.



Photo source: https://en.wikipedia.org/wiki/Dendrobium_carronii

Dendrobium carronii is classified as vulnerable due to illegal over collecting and removal of plants.

Dendrobium cochliodes Schltr. 1912 SECTION *Spatulata* can be found in Papua New Guinea and Irian Jaya as a large sized, hot to cool growing epiphyte in mist forests on the high branches of often solitary exposed trees near water at 400-2,000m. The erect sturdy canes carry 4 to 6, oblong to elliptic, 2 ranked leaves at the apex. This species flowers in spring, summer and autumn on axillary, erect to arching, 20-35cm] several to many flowered inflorescences that arise from nodes near the apex of the cane.



Photo source:

http://bluenanta.com/orchid/57435/species_detail/?tab=gal

This species is one of the few in the *Section Spatulata* recorded from the montane zone. *Dendrobium cochliodes* is allied to *Dendrobium tangerinum* but differs in its flower colour which is yellow usually with glossy chocolate-brown petals, the latter being linear, acute and spirally twisted three or four times. The midlobe of the lip is also distinctive being narrowly oblong, apiculate, and almost half the lip in length. The side-lobes of the lip curve outwards and like *Dendrobium conanthurum* bear rugulose ridges at right angles to the veins on the upper surface. In flower colour, these species might also be confused but the callus ridges of *Dendrobium cochliodes* always taper to the apex.

Its common name is the Shell-Like Dendrobium, and synonyms in use are *Dendrobium ruidilobum* J.J. Sm. 1934; *Durabaculum*

cochliodes (Schltr.) M.A. Clem. & D.L. Jones 2002; *Durabaculum ruidilobum* (J.J.Sm.) M.A. Clem. & D.L. Jones 2002

Dendrobium discolor Lindley 1841 *SECTION Spatulata* is the tallest of the Australian *Dendrobium* species. Three varietal forms are recognised, with one of these highly variable in size and colour. This species is found in Queensland and New Guinea where it grows as a warm to hot epiphyte or lithophyte in exposed, high light conditions on the coastal strip in mangroves or behind sand dunes often subject to salt spray, and on rock faces to 550m. It has few to numerous, cylindrical stems, leafed in the upper two thirds with distichous, ovate to elliptic, leathery, obtuse leaves. Flowering occurs throughout the year with the major flush in spring on axillary, arched, to 60 cm densely fragrant flowered racemes arising from the upper portion of mature canes as the new growth arises. The variation in *Dendrobium discolor* seems more or less continuous rather than disjunct and it is probable that the recognition of so many distinct varieties is unwarranted. However, according to O'Byrne (1994) the entity that is popularly known as 'Rigo Twist' may deserve recognition as a variety or even as a distinct species.



Dendrobium discolor



Dendrobium discolor var. *broomfieldii*.

Photos source: http://www.orchidroots.com/orchid/57633/species_detail/?tab=gal

Dendrobium discolor is a distinctive orchid only to be confused with *Dendrobium conanthurum*, which also often has a convoluted flower. It can be readily distinguished from the latter, by its long-acuminate bracts and flowers in which the sepals and petals usually have undulate-cripsed margins and the lip which has a five-ridged callus, a very small midlobe with upcurved sides and side lobes which are usually incurved and not rugulose (finely wrinkled) on the upper surface.

Its common name is the 2 Different Colour Dendrobium. In Papua New Guinea it is known as Moresby Gold, Rigo Twist and Bensbach Yellow, while in Australia, as the Golden Antler Orchid, the Brown Antler Orchid and the Canary Orchid.

Synonyms in use are *Callista undulatum* [R. Br.] Kuntze 1891; *Dendrobium arachnanthe* Kraenzl. 1910; *Dendrobium broomfieldii* [Fitz.] Fitzgerald 1888; *Dendrobium discolor* fma. *broomfieldii* (Fitzg.) Dockrill 1964; *Dendrobium discolor* subsp. *incurvata* Liddle & P.I. Forst. 1990; *Dendrobium discolor* var. *broomfieldii* (Fitzg.) M.A. Clem. & D.L. Jones 1989; *Dendrobium discolor* var. *fimbrilabium* (Rchb.f.) Dockrill 1964; *Dendrobium discolor* var. *fuscum* (Fitzg.) Dockrill 1964; *Dendrobium elobatum* Rupp 1953; *Dendrobium fuscum* Fitzg. 1879; *Dendrobium undulans* Bakh.f. 1963 ; *Dendrobium undulatum* R. Brown 1810; *Dendrobium undulatum* var. *albertisianum* F.Muell. 1875; *Dendrobium undulatum* R. Br. var. *broomfieldii* Fitz. 1888; *Dendrobium undulatum* R. Br. Var. *carterae* 1911; *Dendrobium undulatum* var. *fimbrilabium* Rchb.f. 1878; *Durabaculum albertisiana* (F. Muell.) M.A. Clem. & D.L. Jones 2002; *Durabaculum arachnanthe* (Kraenzl.) M.A. Clem. & D.L.Jones 2002; *Durabaculum fimbrilabium* (Rchb.f.) M.A.Clem. & D.L.Jones 2002; *Durabaculum fuscum* (Fitzg.) M.A. Clem. & D.L.Jones 2002; *Durabaculum undulatum* M.A.Clem. & D.L.Jones 2002; *Durabaculum undulatum* var. *broomfieldii* M.A.Clem. & D.L. Jones 2002



Dendrobium discolor in situ.

Photo source:
https://orchids.fandom.com/index.php?title=File:Den_discolor_habitat.jpg&limit=20&showall=0

Dendrobium gouldii Rchb. f. 1867 SECTION *Spatulata* can be found in the Bismarck Archipelago and the Solomon Islands as a large to giant sized, hot to warm growing epiphyte growing in exposed positions on isolated trees in riverine forests, coastal forest, swamp forests and plantations, or as a lithophyte on coral cliffs on beaches at sea-level to 700m. It has clustered, fusiform, many noded, green stems carrying a few distichous, coriaceous, purple suffused in youth, obtuse leaves. Flowering in autumn on erect, to 70cm, axillary, racemose, several to many flowered inflorescences arising from the upper nodes on mature leafy canes. It is a highly variable species with several colour forms known ranging from brown through gold, white and blue.

Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2426>



Dendrobium gouldii blue cultivar

Dendrobium gouldii alba

Photos source http://bluenanta.com/orchid/57883/species_detail/?tab=gal



Dendrobium gouldii which is not known from the island of New Guinea itself has often been confused with *Dendrobium lineale*. The former

has longer, more twisted, subacute petals and a longer lip with an obovate midlobe bearing acute, lamellae at the apex of the callus. The latter has shorter, more spatulate, rounded, half-twisted petals and a shorter lip with an oblong midlobe, undulate margins and blunter erose lamellae.

Its common name is Gould's *Dendrobium* after the middle name of one of Veitch's 1800's English orchid breeders. Synonyms in common use are *Callista gouldii* (Rchb. f.) Kuntze 1891; *Dendrobium gouldii* var. *acutum* Rchb.f. 1867; *Dendrobium imthurnii* Rolfe 1912; *Dendrobium undulatum* var. *woodfordianum* Maiden 1899; *Dendrobium woodfordianum* Schltr. 1912; *Durabaculum gouldii* (Rchb.f.) M.A.Clem. & D.L.Jones 2002; *Durabaculum imthurnii* (Rolfe) M.A.Clem. & D.L. Jones 2002

Dendrobium helix P.J. Cribb 1980 SECTION *Spatulata* is a large to giant sized, hot growing epiphyte found in New Guinea where it grows on exposed branches of coastal forest trees at sea-level -150m. This plant has clustered, basally swollen and apically tapering yellow orange stems. These stems carry many, elliptic to ovate-elliptic leaves that are smaller towards the apex. Flowering throughout the year, flowers are borne 50cm erect, ascending or horizontal racemes arising from leaf sheaths at the apex of upper leaf nodes of mature canes. Each raceme can carry 15-20 stiff, fleshy flowers.

Dendrobium helix is one of the larger-flowered and most attractive species in sect. *Spatulata*. It is a variable orchid particularly in its flower colour, attitude and the degree of twisting of the petals. However, it is readily characterised by the lip which has a small recurved midlobe, side lobes that spread widely at the apex and a violet or lilac callus of three ridges. Its common names are the Corkscrew Orchid and the Twisted Petal *Dendrobium*. A synonym in use is *Durabaculum helix* (P.J.Cribb) M.A.Clem. & D.L.Jones, *Orchadian* 13: 488 (2002)



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2434>



Photo source: <https://www.flickr.com/photos/afriorchids/3254895799>

Dendrobium johannis Rchb.f 1865 SECTION *Spatulata* is a small to large sized, hot to warm growing epiphytic species found in Northeastern Australia and Papua New Guinea in rainforests and wetlands. These environments endure scarce winter rain and are always subject to high light. This species has densely clustered, brown, unevenly swollen pseudobulbs carrying 3-8 dark green, tough, thick sharply pointed leaves. Blooming from autumn through winter and into spring, waxy, glossy, fragrant longlasting flowers are borne 15- 50 cm 2-20 flowered, racemose inflorescences arising from nodes at the apex of leafy and leafless canes.

Dendrobium johannis and the similar *Dendrobium trilamellatum* can be readily recognised by their rather dwarf habit, fusiform stems bearing a few linear-lanceolate leathery leaves towards the apex, and their small yellowish or brownish flowers. The former can be readily distinguished by its generally smaller stature and flowers which have chocolate-brown to purplish brown sepals and petals.

Its common is Johan's *Dendrobium* after John Gould Veitch and in Australia is known as the Chocolate Tea Tree Orchid. Synonyms in use are *Callista johannis* (Rchb. f.) Kuntze 1891; *Cepobaculum johannis* (Rchb.f.) M.A. Clem. & D.L.Jones 2002; *Dendrobium undulatum* R. Br. var. *johannis* [Rchb.f.]F.M.Bailey 1883



Photo source: <http://www.teatreeorchid.com/dendrobium-johannis.html>

Dendrobium lasianthera J.J. Sm 1932 SECTION *Spatulata* is another large sized, hot growing epiphyte found in lowland Papua New Guinea forests. These damp, humid river and stream locations from sea level have constantly high humidity. The erect stems carry coriaceous, emarginate, alternate leaves along the full length. Flowering from spring through autumn, up to 60cm racemes carry 10-30 showy, long-lasting flowers arising from the nodes near the apex of mature leafy canes.

While *Dendrobium lasianthera* is one of the finest species in sect. *Spatulata*, it is generally considered to be a difficult species in cultivation. Easily recognized by the spirally twisted petals in combination with the relatively very small, apiculate midlobe of the lip, it has several colour forms, the best known of which are May River Red and Sepik River Blue although the latter does not grow along the Sepik River itself, and is not blue. Its common name is the Woolly Pollina Dendrobium. Synonyms in use are *Dendrobium lasiantherum*?; *Dendrobium ostrinoglossum* Rupp. 1953; *Dendrobium stueberi* Hort., Stuber ex Zurrow 1934; *Durabaculum lasiantherum* (J.J.Sm.) M.A.Clem. & D.L. Jones 2002



Dendrobium lasianthera Sepik River Blue



Dendrobium lasianthera May River Red

Dendrobium lineale Rolfe 1889 SECTION *Spatulata* is another large to giant sized, hot to warm growing epiphyte or lithophyte from Papua New Guinea found along streams and ocean fringes at sea-level -800m. This species has typical erect, cane-like stems that are leafy towards the apex, and carry many, oblong or lanceolate, rigid, leathery, persistent, dark green leaves. A very floriferous species, *Dendrobium lineale* has many flowered, up to 90cm racemes carrying

Photos source: <http://bluenanta.com/detail/58193/species/?tab=sum>

brightly coloured fragrant, long-lived and heavy-textured flowers from spring to early autumn. The flower racemes arise from nodes at or near the apex of the mature leafed canes.

Dendrobium lineale is closely allied to, and often confused with *Dendrobium gouldii*, a species from the Bismarck Archipelago and the Solomon Islands. It differs in its shorter, less twisted spatulate petals with obtuse, rounded or truncate tips and a lip in which the midlobe is oblong with an undulate margin and oblong raised lamellae on its upper surface. Its flowers are usually white with white, bluish, lilac or pink petals and a purple- or violet-veined lip. However, pale yellow-flowered forms have been recorded although this may be the result of introgression from the closely allied and sympatric *Dendrobium sylvanum*.

Its common name is Morobe Shower. Synonyms in use are *Callista veratrifolia* (Lindl.) Kuntze 1891; *Dendrobium augustae-victoriae* Kraenzl. 1894; *Dendrobium cogniauxianum* Kraenzl. ex Warb. 1891; *Dendrobium grantii* C.T. White 1940; *Dendrobium imperatrix* Kraenzl. 1895; *Dendrobium veratroides* Bakh.f. 1963; *Dendrobium veratrifolium* Lindl. non Roxb. 1843; *Durabaculum veratrifolium* M.A. Clem. & D.L. Jones 2002



Photos source: <http://bluenanta.com/detail/58245/species/?tab=sum>



Dendrobium mirbelianum Gaudich 1829 SECTION *Spatulata* is yet another Queensland, Solomon Islands, Papua New Guinea, Bismarck Islands, Moluccas, and Sulawesi as a medium to giant sized epiphyte. Found in coastal lowland forests and swamps as an epiphyte on mangroves and other coastal trees, or as a lithophyte on exposed rock outcrops in savannah at sea-level to 650m, this species grows in high humidity and bright light. The basally swollen, cane-like and leafy stems carry many, oval to ovate, thick, leathery, dark green, purple striped leaves. Flowering takes place on terminal or axillary racemes 20-45 cm long that are horizontal to gracefully arching with 10 to 30 flowers on each. The flowers are glossy and heavy textured. Flowering takes place on old leafless or leafy mature canes throughout the year and often more than once. An unusual feature of the species are two flowering typologies, one self-incompatible, with flowers lasting up to 2 months, the other self-impollinating, with flowers that last no more than 2-3 days or do not open at all. This is known as cleistogamy.



Photo source:

<https://www.monaconatureencyclopedia.com/dendrobium-mirbelianum-2/?lang=en>

Habitat Photo source:

<https://www.flickr.com/photos/76211142@N04/24379739388>

Its common name is Mirbel's Dendrobium after a French botanist of the 1800's. In Australia, it is known as the Mangrove Orchid and the Dark-Stemmed Antler Orchid. Synonyms in use are *Callista mirbelliana* (Gaudich.) Kuntze 1891; *Dendrobium aruanum* Kranzlin 1910; *Dendrobium buluense* Schlechter 1912; *Dendrobium buluense* var. *kauloense* Schlechter 1912; *Dendrobium giuliorietti* Bailey 1883; *Dendrobium giulianettii* F.M. Bailey 1883; *Dendrobium polycarpum* Rchb.f 1883; *Dendrobium prionocheilum* F. Muell. & Kraenzl. ex Kraenzl. 1894; *Dendrobium rosenbergii* Teijsm. & Binn. 1862; *Dendrobium wilkianum* Rupp 1941; *Durabaculum mirbelianum* (Gaudich.) M.A. Clem. & D.L. Jones 2002; *Durabaculum prionocheilum* (F. Muell. & Kraenzl.) M.A. Clem. & D.L. Jones 2002

Dendrobium mirbelianum is a widespread and variable orchid particularly in flower size. It is closely related to the Moluccan *Dendrobium calophyllum* and to *Dendrobium tokai* from Fiji and Tonga but can be distinguished by its ochre or brownish-yellow sepals and petals and lip with broad side-lobes and an ovate-elliptic acute midlobe half the length of the lip. The callus ridges on the lip are scarcely raised towards the apex and taper out on the apical half of the midlobe.



Dendrobium nindii W. Hill 1874 SECTION *Spatulata* is found in north-eastern Australia and sporadically in Papua New Guinea growing in mangrove thickets in hot steamy low lying coastal swamps at sea-level to 200m. It is another large to giant sized, hot growing epiphyte with basally swollen, tapering towards the apex canes with blackish brown with purple stripes and 5-15 dark green, elliptic to ovate, alternating, rigid leaves on upper-half. In its natural habitat, this species grows in high light and at times is soaked with salt spray as they inhabit trees overhanging the sea. Flowering takes place through summer and early autumn on 40 cm erect, racemose, 8-25 flowered inflorescences. The flowers are fragrant and long-lasting, and the racemes arise from the upper nodes of the cane. This species needs bright sunlight to initiate blooming and can often be found high in the mangrove canopy. This species has considerable colour variation ranging from pale creamy pink to the more usual strikingly coloured form pictured below.



Photo source:

<http://bluenanta.com/detail/58509/species/?tab=su>
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Dendrobium nindii is a large and attractively flowered orchid, and according to Cribb, it is most closely related to the Philippine species *Dendrobium taurinum* but can be distinguished by its flower colour and lip on which the callus ridges taper to the apex on the midlobe.

Its common name is Nind's Dendrobium after an Australian species orchid collector, and as the Blue Antler Orchid. Synonyms in use are *Dendrobium ionoglossum* Schlechter 1912; *Dendrobium ionoglossum* var. *pomatophilum* Schltr. 1912; *Dendrobium jofftii* T. Durand & B.D. Jacks. 1902; *Dendrobium tofftii* F.M. Bailey 1890; *Durabaculum ionoglossum*

(Schltr.) M.A. Clem. & D.L.Jones 2002; *Durabaculum nindii* (W.Hill) M.A.Clem. & D.L. Jones 2002

Dendrobium stratiotes Rchb. f. 1886 SECTION *Spatulata* can be found in western Papua New Guinea, the Moluccas, the Sunda Islands and Sulawesi at low elevations as a medium to large sized, hot to warm growing epiphyte. It is distinguished by clustered, terete to long fusiform stems carrying 5 or more rigid, leathery, persistent, obliquely bilobed apical leaves. Flowering in summer and autumn, an erect to sub erect 7.5-30 cm, inflorescence with tubular, subacute to obtuse floral bracts carries 4-15, large flowers. The flower racemes arise from the middle to the apex of mature pseudobulbs.



Dendrobium stratiotes has flowers that can measure as much as 10 cm from top to bottom. While it is clearly related to *Dendrobium antennatum* and *Dendrobium leporinum*, it differs from the former in having flowers of a larger size with larger segments and a lip in which the midlobe is half the total length of the lip and acuminate. Its flowers are also larger than those of *Dendrobium leporinum* and distinctively coloured with yellow-green or green rather than violet petals.

Photo source:
<https://www.monaconatureencyclopedia.com/dendrobium-stratiotes/?lang=en>

Its common name is the Stalwart Dendrobium referring to the flowers standing up in a row with the

sepals all upright. Synonyms in use are *Callista stratiotes* (Rchb.f.) Kuntze 1891; *Ceratobium stratiotes* (Rchb.f.) M.A. Clem. & D.L. Jones 2002; *Dendrobium strebloceras* Rchb.f 1886 var. *rossianum*

Dendrobium tangerinum P.J.Cribb 1980 SECTION *Spatulata* is a small to large sized Papua New Guinea species found as a hot to cool growing epiphyte in lowlands small trees or as a lithophyte on cliff faces on rocks at sea-level to 1,250m. The species has erect, cane-like basally slightly swollen stems carrying many leathery leaves on the upper half of the stem. Flowering throughout the year, 35-45 cm sheathed inflorescences carry to 20 flowers and arise from nodes near the apex of leafy canes. The flowers are long-lasting. Wild populations of this have suffered through over-collecting and it is now uncommon in its former habitats.

Dendrobium tangerinum has in the past been misidentified as *Dendrobium strepsiceros* is allied to *Dendrobium cochliodes*, but differs in its characteristic orange flowers and the incurved side lobes, short ovate, acute midlobe and low lilac callus of the lip. It differs from *Dendrobium helix* in that it lacks the conspicuous stielidia on the column of that species.



Photo source: <http://bluenanta.com/detail/59235/species/?tab=sum>

Its common name is the Tangerine Coloured Dendrobium. Synonyms in use include *Ceratobium strepsiceros* (J.J.Sm.) M.A.Clem. & D.L.Jones 2002; *Dendrobium strepsiceros* J.J. Sm. 1912; *Durabaculum tangerinum* (P.J.Cribb) M.A.Clem. & D.L. Jones 2002

Dendrobium taurinum Lindl. 1843 SECTION *Spatulata* is found in the Philippines growing in coastal mangrove swamps and open woody plateaus below 300m with high year-round rainfall. It is another large sized (up to 2 m tall), hot growing epiphyte with cane-like, erect, cylindrical or strongly spindle-shaped brown, orange stems with many, dark, shiny green, thick, leathery leaves. Flowering on 10cm more than a metre long in spring, few-to many flowered axillary, erect, slightly fractiflex inflorescences arise from near the apex of the cane. The flowers are long lasting.



Photo source:

<http://bluenanta.com/detail/59240/species/?tab=sum>

Its common Name is the Bull-Headed Dendrobium, and synonyms in use are *Callista taurina* (Lindl.) Kuntze 1891; *Dendrobium taurinum* fma. *alba* Valmayor & Tiu 1984; *Dendrobium taurinum* var. *amboinense* Rolfe 1897; *Durabaculum amboinense* (Rolfe) M.A. Clem. & D.L. Jones 2002; *Durabaculum taurinum* (Lindl.) M.A. Clem. & D.L. Jones 2002

To conclude this article, I feel that it will be beneficial to identify a few of the less commonly cultivated species from Section *Calyptrochilus* is, some of which are quite spectacular and hold particular attraction for the serious hobbyist prepared and able to create the specialised environmental conditions necessary to grow and flower these high-altitude species. A few species that will be covered in this final section are:

Dendrobium cuthbertsonii
Dendrobium cyanocentrum
Dendrobium laevifolium
Dendrobium lawesii
Dendrobium parvulum
Dendrobium vexillaris
Dendrobium violaceum

Dendrobium cuthbertsonii F. Mueller 1888 SECTION *Calyptrochilus* is a miniature, high altitude species found in Papua New Guinea and Irian Jaya as a mossy tree growing, miniature epiphyte or lithophyte on moss covered rocks adjacent to streams or as a terrestrial on east-facing cliffs in leaf litter sheltered by small plants in exposed sun conditions. This species may be found from 750-3,500m, growing in cool to cold conditions with constant humidity, frequent rain (although not daily) and high air movement, especially along mountain ridges. Maximum daytime temperature is 25°C with minimum night temperatures of 5°C. Wolfgang H. Bandisch at <http://members.optusnet.com.au/bdobson/Dendrobium%20cuthbertsonii.html> writes that "Along the road from the Ambua Lodge to the Tari Gap one can clearly observe the terrestrial habit of the species. It grows abundantly in full sun on road cuttings devoid of any other plants with its roots buried up to 8 cm in the clay soil. The sight is spectacular as the bright 'electric' red colour starkly contrasts with the drab surroundings. Venturing off the road on to the embankments one can find *Dendrobium cuthbertsonii* growing in the bare soil along the forest edge, often as the only vegetation on the ground. In some places it is impossible not to step on them because of the sheer numbers present. The embankments on the side of the road are often so well-drained that even mosses find it hard to establish themselves in that environment." This highly desirable, but difficult to grow species was popularised in Australia by Gerald McCraith who was able to grow and flower this species.

It is characterised by clustered, very short, fusiform stems carrying lanceolate, rough textured, dark green, purple veined 'warty' leaves. Free-flowering year round, solitary flowers are borne on axillary, short, single flowered inflorescences. The highlight of this species are the brightly coloured flowers, most commonly red but with any combination of red and yellow in the sepals and petals or labellum, pink, combinations of pink and white in the sepals and petals and from selective breeding, yellow.



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2356>

Cultivation of *Dendrobium cuthbertsonii* in climates other than its natural habitat has proven to be challenging. Mounting on tree-fern slabs as well pot culture has been successful, although it seems that plants eventually die for no apparent reason. They flower themselves to death although this does not occur in their natural habitat. However, for those successful in cultivating this species, flowers can last for many months. When we visited Marni Turkel's nursery in California in 2017, she had many plants of *Dendrobium cuthbertsonii* in flower.

Its common name is Cuthbertson's Dendrobium named for an 1800's English orchid collector. Synonyms in use are *Dendrobium agathodaemonis* J.J.Sm.; *Dendrobium asperifolium* J.J.Sm.; *Dendrobium atromarginatum*; *Dendrobium carstensiense* J.J.Sm.; *Dendrobium coccinellum* Ridley; *Dendrobium euphues* Ridley; *Dendrobium fulgidum* Ridley; *Dendrobium laetum* Schlechter; *Dendrobium lichenicola* J.J.Sm.; *Dendrobium sophronites* Schlechter; *Dendrobium trachyphyllum* Schlechter; *Maccraitha agathodaemonis* (J.J.Sm.) M.A.Clem. & D.L. Jones 2002; *Maccraitha asperifolia* (J.J.Sm.) M.A. Clem. & D.L. Jones 2002; *Maccraitha atromarginata* (J.J.Sm.) M.A.Clem. & D.L. Jones 2002; *Maccraitha coccinella* (Ridl.) M.A. Clem. & D.L. Jones 2002; *Maccraitha cuthbertsonii* (F. Muell.) M.A. Clem. & D.L. Jones 2002; *Maccraitha euphues* (Ridl.) M.A. Clem. & D.L. Jones 2002; *Maccraitha lichenicola* (J.J.Sm.) M.A.Clem. & D.L. Jones 2002; *Maccraitha sophronites* (Schltr.) M.A. Clem. & D.L. Jones 2002; *Maccraitha trachyphylla* (Schltr.) M.A. Clem. & D.L. Jones 2002; *Pedilonum asperifolium* (J.J. Sm.) Brieger 1981; *Pedilonum coccinellum* (Ridl.) Rauschert 1983; *Pedilonum cuthbertsonii* (F. Muell.) Brieger 1981; *Pedilonum euphues* (Ridl.) Rauschert 1983; *Pedilonum sophronites* (Schltr.) Rauschert 1983; *Pedilonum trachyphyllum* (Schltr.) Brieger 1981



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2356>



<https://www.flickr.com/photos/27206992@N03/23612346501/>



Dendrobium cyanocentrum Schltr. 1906 SECTION *Calyptrochilus* is another miniature Papua New Guinea species where it can be found as a mini miniature sized, hot to cool growing epiphyte in rainforests, forest clearings and riverbanks at 100 to 1,600 m. It has erect to semi-pendent, ovoid to cylindrical to fusiform pseudobulbs carrying 2 to 4, distichous, apical, slender, rough, twisted, purple beneath, semi-glossy leaves. Flowering in late winter and early spring, one-two flowers are borne on terminal, short inflorescences often hidden within the leaves, arising on leafy and leafless canes with a single (rarely 2), star-shaped, lightly fragrant flowers.



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2357>

Dendrobium cyanocentrum is the type species of the former section *Oxyglossum* having been described, along with *Dendrobium pentapterum*, from material collected by Schlechter during his first expedition to New Guinea in 1901-1902. The sharply pointed reflexed sepals and petals serve to distinguish *Dendrobium cyanocentrum* from all other species in the section. The flowers are scented like citronella.

Its common name is the Black-Blue Spurred Dendrobium. Synonyms in use are *Dendrobium flavispiculum* J.J. Sm. 1913; *Dendrobium lapeyrouseoides* Schltr. 1912; *Oxyglossellum cyanocentrum* (Schltr.) M.A. Clem. & D.L. Jones 2002; *Pedilonum cyanocentrum* (Schltr.) Rauschert 1983; *Pedilonum flavispiculum*

(J.J.Sm.) Rauschert 1983; *Pedilonum lapeyrouseoides* (Schltr.) Rauschert 1983



Photo source: <https://www.flickr.com/photos/myorchids/4447614920>

Photo source: <https://travaldo.blogspot.com/2018/01/dendrobium-cyanocentrum-care-and-culture.html>



Dendrobium laevifolium Stapf 1924 SECTION *Calyptrochilus* occurs as a miniature, warm to cold growing epiphyte in Papua New Guinea, Solomon Islands, Santa Cruz Islands and Vanuatu. Found as an epiphyte at 650-2,400m in deep growths of lichen and moss on trees or slightly sloping branches of small trees and shrubs a few feet above the mossy elfin forest bed almost constantly saturated with cold mist or light rain with brief bursts of sun, this species has club-shaped stems or tapering at both ends, and carrying 2, deciduous, linear leaves. Flowering in summer takes place on a very short, axillary, one to few flowered racemes arising from nodes at the apex of the leafless stems.



Photo source: <http://www.orchidspecies.com/denlaevifolium.htm>

Its common name is the Shiny Leafed Dendrobium. Synonyms in use are *Dendrobium occulatum* Ames 1933; *Maccraitha laevifolia* (Stapf) M.A. Clem. & D.L. Jones 2002; *Pedilonum occultum* (Ames) Rauschert 1983



Photo source:
<https://www.orchidweb.com/orchids/dendrobium/species/dendrobium-laevifolium-var-aureum>



Photo source: <https://www.orchidsforum.com/threads/dendrobium-laevifolium.8829/>

Dendrobium lawesii F. Mueller 1884 SECTION *Calyptrochilus* is a medium sized, warm to cool growing epiphyte from Papua and New Guinea and Bougainville Island at 800-2,000m where it is found on mist forests growing low on trees or the underside of branches. The thin, flattened stems carrying broadly ovate, bilaterally flattened thick fleshy leaves that overlap at the base. This species flowers year-round on short racemes on old and new leafless canes; each pendant inflorescence carrying one to six showy, pleasantly scented flowers.

Dendrobium lawesii is a highly variable and widespread species with many different colour forms including alba, pink, and red, yellow, purple and white bicolours. The original description by von Mueller is extremely vague and applies to virtually any related species and it is agreed that some revision based on all available material is urgently needed. This is most likely to result in more names added to the list of synonyms. *Dendrobium lawesii* is the type species for the section.



Photo source: <http://www.ecuagenera.com/Dendrobiumlawesii-bicolor-red-yellow-002892>

Photo source:
<https://www.earthpedia.com/earthpedia/plant/no/dendrobium-lawesii/>



Its common name is Lawes' Dendrobium named for the English missionary and collector in 1800's New Guinea. Synonyms in common use are *Chromatotriccum delphinioides* (R.S. Rogers) M.A. Clem. & D.L.Jones 2002; *Chromatotriccum lawesii* (F.Muell.) M.A. Clem. & D.L.Jones 2002; *Dendrobium delphinioides* R.S.Rogers 1925; *Dendrobium lawesii* var. *salmonicolor* Schltr. 1912 ; *Dendrobium pseudomohlianum* Krzl. ?; *Dendrobium warburgianum* Krzl. 1891; *Pedilonum lawesii* (F. Muell.) Rauschert 1983

Dendrobium parvulum Rolfe 1899 SECTION *Calyptrochilus* can be found in Sulawesi, Celebes and Papua New Guinea at 600-2,600m as a mini-miniature sized, warm to cold growing epiphyte on mossy, horizontal branches of rainforest trees. This species forms large mats of globose, ellipsoid, ovoid to occasionally obovoid, yellowish green to dark reddish pseudobulbs that carry two erect leathery sometimes red flushed succulent leaves. Flowering in spring, flowers are borne on short, terminal one-three flowered inflorescences on both leafless and leafy stems. The flowers are long lasting flowers.



Dendrobium delicatulum F. Muell. & Kraenzl. (Non Kraenzl. 1892) is a member of section *Brevisaccata*. If not already described under another name, it requires a new name, as *Dendrobium delicatulum* Kraenzl. (= *Dendrobium parvulum*), described two years earlier, has priority.

Photo source: Chris Jones

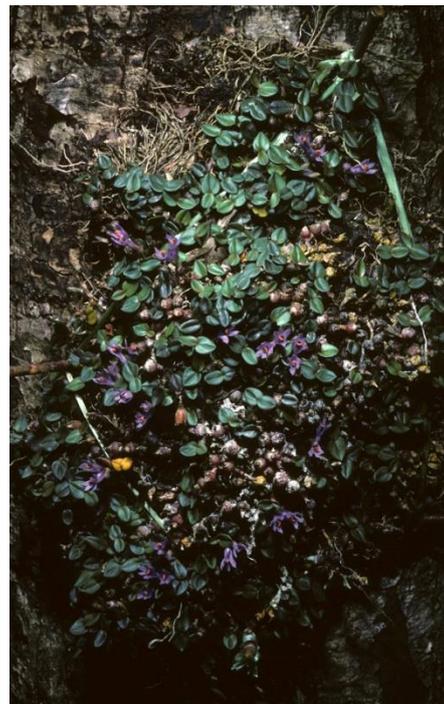
Its common name is the Small Flowered *Dendrobium*, and synonyms in use are *Dendrobium delicatulum* F. Muell. & Kraenzl. 1894; *Dendrobium delicatulum* subsp. *huliorum* T.M. Reeve & P. Woods 1981; *Dendrobium delicatulum* subsp. *parvulum* (Rolfe) T.M. Reeve & P. Woods 1981; *Dendrobium minutum* Schltr. 912; *Dendrobium parvulum*

subsp. *huliorum* (T.M.Reeve & P.Woods) Ormerod 2003; *Dendrobium parvulum* subsp. *minutum* (Schltr.) Ormerod 2003; *Katherinea parvula* (Rolfe) A.D.Hawkes 1956; *Pedilonum minutum* (Schltr.) Rauschert 1983; *Sarcopodium parvulum* (Rolfe) Kraenzl. 1910

Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2553>



Photo source: <https://orchids-shop.com/dendrobium-parvum-delicatulum-violet-blue.html>



Dendrobium pentapterum Schlechter 1906 SECTION *Calyptrochilus* is a miniature sized, cool to warm growing, lower montane cloud forest epiphytic species found growing on mossy branches in moderate shade to bright light at 500-2,000m in northeastern Papua New Guinea and the Philippines. The free-flowering species has ovoid to club-shaped short canes enveloped by persistent leaf sheaths with branching stems carrying 1 to 3, linear to elliptic leaves. This species also flowers year-round on short, terminal, single flowered inflorescences with longlasting flowers arising from the apex of the leafed pseudobulb. The flowers are nestled in the leaves. While *Dendrobium pentapterum* has a limited distribution in NE New Guinea, surprisingly it was recently recorded from Mt. Apo on Mindanao in the Philippines (Cootes 2001).



Photo source:

https://commons.wikimedia.org/wiki/File:Dendrobium_pentapterum_Orchi_080.jpg

Its common name refers to the 5-winged ovary. Synonyms on use are *Dendrobium brevicaule* Krzl. 1899; *Dendrobium pentagonum* Kraenzl. 1910; *Pedilonum pentagonum* (Kraenzl.) Rauschert 1983; *Pedilonum pentapterum* (Schltr.) Rauschert 1983.

Dendrobium petiolatum Schltr. 1912 SECTION *Calyptrochilus* is another species from Papua New Guinea where it can be found on mossy horizontal branches in deep shade as a miniature, warm to cold growing epiphyte at 800-2,400m. This species has erect to suberect stems enveloped by persistent leaf sheaths carrying a single, oblong-elliptic leaf with a distinct stem. This semi-deciduous orchid flowers in spring and summer on short, few-many flowered inflorescences arising from the nodes near the apex of leafless pseudobulbs.



Its common name is the Stemmed Dendrobium. Synonyms in use are *Dendrobium unifoliatum* Schltr.1921; *Pedilonum petiolatum* (Schltr.) Rauschert 1983

Photo source:<http://www.ipernity.com/doc/162835/36602192>

Dendrobium vexillarius J.J. Smith 1910 SECTION *Calyptrochilus* can be found Papua New Guinea, New Ireland and the Moluccas as a small sized, cool to cold epiphyte at 1,100-3,500m on the tips of tree branches or as a terrestrial at higher elevations in moss beds. The cylindrical, light green stems carry 2-5 apical, pointed, dark green/grey green below leaves. This species blooms year-round on erect, short, few to several flowered racemes that arise from the nodes of leafed and leafless canes carrying 2 to 7, shiny, variable colour long-lasting flowers.

Dendrobium vexillarius is the most common of all the '*Oxyglossum*' species in Papua New Guinea with a wide range of habitats and colour forms. *Dendrobium vexillarius* var. *vexillarius* is mainly confined to the alpine zone, above 3,000 m, and is quite common in some localities. However it does extend lower than this, usually to about 2,500 m, but in the Wau area, on the Edie Creek road, there is (or was) a colony at 2,000-2,200 m.

Photo source:
<http://www.orchidspecies.com/orphotdir/dendvexillariusinsitu.jpg>



Photo source: <https://www.pinterest.com.au/pin/24769866681118949/?nic=1>

The unusual colour of *Dendrobium vexillarius* var. *retroflexum* that varies from a sea-green or bluish green to full blue, bluish grey to light silvery grey, with flowers often tinged with violet, especially at the tips of the sepals and petals and on the mentum and ovary, and the dark violet, almost black lip with an orange-red to scarlet apex. *Dendrobium vexillarius* var. *uncinatum* is the most common of the six varieties of *Dendrobium vexillarius* and has the widest distribution throughout mainland New Guinea. *Dendrobium vexillarius* var. *microblepharum* has bright clusters of orange to orange red flowers, and is used for arm and hair adornment. *Dendrobium vexillarius* var. *albiviride* is closely related to *Dendrobium vexillarius* var. *uncinatum*, but grows at higher altitudes of 2,800 to 3,400 m on the Owen Stanley Range. Its stems are usually quite thick and it has larger flowers which are whitish green to yellow.

Its common name the Flag-Carrying Dendrobium refers to the odd flowers. Synonyms in use include *Dendrobium albiviride* P. van Royen 1979; *Dendrobium albiviride* var. *minor* P. van Royen 1979; *Dendrobium bilamellatum* R.S. Rogers 1925; *Dendrobium brachyphyta* Schlechter 1923; *Dendrobium caenosicallinum* P. van Royen 1979; *Dendrobium microblepharum* Schlechter 1923; *Dendrobium retroflexum* J.J. Sm. 1911; *Dendrobium semeion* P. van Royen 1979; *Dendrobium tenens* J.J. Sm. 1929; *Dendrobium trialatum* Schlechter 1912; *Dendrobium trifolium* J.J. Sm. 1917; *Dendrobium uncinatum* Schlechter 1912; *Dendrobium vexillarius* var. *albiviride* (P. Royen) T.M. Reeve & P. Woods 1989; *Dendrobium vexillarius* var. *elworthyi* T.M. Reeve & P. Woods 1989; *Dendrobium vexillarius* var. *hansmeyerense* Howcroft & W.N. Takeuchi 2002; *Dendrobium vexillarius* var. *microblepharum* (Schltr.) T.M. Reeve & P. Woods 1989; *Dendrobium vexillarius* var. *minor* (P. Royen) Ormerod 2003; *Dendrobium vexillarius* var. *retroflexum* (J.J. Sm.) T.M. Reeve & P. Woods 1989; *Dendrobium vexillarius* var. *uncinatum* (Schltr.) T.M. Reeve & P. Woods 1989; *Dendrobium xiphophorum* P. van Royen 1979; *Pedilonum brachyphyta* (Schltr.) Rauschert 1983; *Pedilonum microblepharum* (Schltr.) Rauschert 1983; *Pedilonum retroflexum* (J.J. Sm.) Rauschert 1983; *Pedilonum trialatum* (Schltr.) Rauschert 1983; *Pedilonum uncinatum* (Schltr.) Rauschert 1983; *Pedilonum vexillarius* (J.J. Sm.) Rauschert 1983

Dendrobium violaceum Kraenzl. 1910 SECTION *Calyptrochilus* comes from New Guinea where it is most found in secondary growth or primary forest margins in bright light at 750-2,000m. It is another miniature cool to warm growing epiphyte, lithophyte or occasional terrestrial with thick, fleshy, basally swollen stems carrying 2 to 4 apical, linear, channelled leaves. Flowering takes place throughout the year on short basal few to several flowered inflorescences arising from the base of the pseudobulb. Several clustered long-lasting flowers are open at the same time.

Dendrobium violaceum is related to *Dendrobium hellwigianum* and *Dendrobium pentapterum*. It is an attractive species that appears to be easier to grow and flower in cultivation than most of its 'Oxyglossum' relatives. Individual plants vary widely in size and shape, although the leaves are distinctive. Plants in exposed habitats plants have shorter, wider and more rigid leaves. *Dendrobium violaceum* subsp. *cyperifolium* occurs mainly in West New Guinea but it is also recorded from the Sepik River catchment in Papua New Guinea.



Photo source: <http://www.ecuagenera.com/Dendrobium-violaceum-blue/en>



Photo source: <http://www.orchidsnewguinea.com/orchid-information/species/speciescode/2680>

Its common name is the Purple Dendrobium. Once again, there are many synonyms in use *Dendrobium allioides* J.J. Sm. 1935; *Dendrobium brachyacron* Schltr. 1919; *Dendrobium cyperifolium* Schltr. 1923; *Dendrobium dryadum* Schltr. 1912; *Dendrobium geminiflorum* Schltr. 1919; *Dendrobium igneoviolaceum* J.J.Sm. 1929; *Dendrobium pityphyllum* Schltr. 1919; *Dendrobium quinquecostatum* Schltr. 1912; *Dendrobium scotiiferum* J.J.Sm. 1934; *Dendrobium tenuicalcar* J.J. Sm. 1911; *Dendrobium violaceum* subsp. *cyperifolium* (Schltr.) T.M. Reeve & P. Woods 1989; *Pedilonum brachyacron* (Schltr.) Rauschert 1983; *Pedilonum cyperifolium* (Schltr.) Rauschert 1983; *Pedilonum dryadum* (Schltr.) Rauschert 1983; *Pedilonum geminiflorum* (Schltr.) Rauschert 1983; *Pedilonum pityphyllum* (Schltr.) Rauschert 1983; *Pedilonum quinquecostatum* (Schltr.) Brieger 1981; *Pedilonum scotiiferum* (J.J.Sm.) Rauschert 1983; *Pedilonum tenuicalcar* (J.J.Sm.) Rauschert 1983; *Pedilonum violaceum* (Kraenzl.) Rauschert 1983

Dendrobium wentianum J.J.Sm. 1911 SECTION *Calyptrochilus* is also from Papua New Guinea where it can be found in montane and subalpine scrub as a large sized, cool to cold growing epiphyte, lithophyte or terrestrial in humus, in shady, mossy branches of forest trees and on sub alpine shrubs at 1,850 -3,300m. It can be recognised by the pendulous, many angled, branched stems carrying many, thin, ovate, dark green leaves that twist to form a single plane. Flowering takes place in winter and spring on short, few flowered inflorescences with pendulous, large, longlasting, wide opening, showy flowers. Racemes arise from the nodes at the upper end of leafless canes



Photo source: <https://www.flickr.com/photos/jvinoz/27834545891>

Its common name is Went's Dendrobium.



Synonyms in use are *Chromatotriccum deflexum* (Ridl.) M.A. Clem. & D.L.Jones 2002; *Chromatotriccum obtusipetalum* (J.J.Sm.) M.A.Clem. & D.L.Jones 2002; *Chromatotriccum vacciniifolium* (J.J.Sm.) M.A.Clem. & D.L.Jones 2002; *Chromatotriccum wentianum* (J.J.Sm.) M.A.Clem. & D.L.Jones 2002; *Dendrobium deflexum* Ridl. 1916; *Dendrobium obtusisepalum* J.J. Sm. 1911; *Dendrobium vacciniifolium* J.J.Sm. 1935; *Pedilonum deflexum* (Ridl.) Rauschert 1983; *Pedilonum obtusipetalum* (J.J. Sm.) Rauschert 1983; *Pedilonum wentianum* (J.J.Sm.) Rauschert 1983.

Photo source: <https://adventurecarstensz.com/2019/05/14/endemic-flora-along-the-trekking-route-to-carstensz/>

Hopefully, this article has increased your interest in growing more members of this large genus. The huge variety of *Dendrobium* orchids and diverse habitats they occupy mean that there are species ranging from those that require little or no special conditions to the often brightly coloured species from sub-alpine environments or hot, steamy lowland primary forest. *Dendrobium* orchids range in size from large hot tropical species up to 2m tall, to minute, mist forest species not more than 5cm tall. They occur throughout the western Pacific and East Asia from as far north as Japan to as far south as Tasmania and southern New Zealand, east to Tahiti and west to western India (Lavarack et al. 2000). The genus (as currently delineated) includes more than a thousand species found in widely varying habitats (Lavarack et al. 2000; Adams et al. 2006)