Accepted name: *Dendrochilum gibbsiae* Rolfe, J. Linn. Soc., Bot. 42: 147 (1914)

Subgenus – *Platyclinis*

Synonyms

Dendrochilum kinabuluense Rolfe, J. Linn. Soc., Bot. 42: 148 (1914).
Dendrochilum quinquelobum Ames, Orchidaceae 6: 63 (1920).

Origin in the Wild

Brunei, Sabah, Sarawak and Kalimantan

Elevation in the Wild

800 – 2,400 metres

Habitat in the Wild

The type was collected in Sabah on Mount Kinabalu on the Marai Parai Spur.

Within Sarawak this species has been collected in the Marudi District in the Gunung Mulu National Park and on Mount Api; Belaga District on the Linau-Balui divide and the Nawai/Balui Rivers; Simunjan District on Mount Ampungan and on Batu hill in the Hose Mountains of the Kapit District.

In Brunei this species has been collected from Temburong District on Mount Pagon.

Within Sabah specimens mostly appear to have been collected from Mount Kinabalu. The Leiden specimen L0269566 was collected in the Tawai National Park.

In Kalimantan Timur this species was collected east of Long Nawan on the Kayan River near Long Sungai Barang.

Jeffrey Wood described the habitat as lower montane oak-laurel forest, open montane forest on limestone, mossy forest on ultramafic substrate, roadside banks on sandstone and shale outcrops, and limestone boulders in primary rainforest. *Dendrochilum gibbsiae* has been recorded as growing on tree trunks and lower branches (Wood 2001).

The Plants Description

Grows as a terrestrial or epiphyte. Pseudobulbs cluster along short but sometimes creeping rhizomes, rhizome grow to 10 cm long and rarely 16 cm long. Pseudobulbs are a cylindrical, narrowly oblong, ovoid-oblong or narrowly fusiform shape. Pseudobulbs measure 1.2-4.8 cm long and 0.3-1 cm in diameter. Pseudobulbs are covered by 3-4 cataphylls while they are growing. The cataphylls disintegrate into persistent fibres as the pseudobulbs mature. Leaves are petiolate; petioles measure 1.5-3 cm long. Leaf blades are a linear-lanceolate or oblong-lanceolate shape and have subacute or acute apices. Leaf blades measure 10-28 cm long and 0.6-1.8 cm wide. There are 5-7 distinct nerves on the blade.

Peduncles are erect and measure 8-13 cm long. Rachises are curved and measure 10-16 cm long. Rachises are quadrangular in cross-section. Flowers alternate distichously and are spaced 2-3 mm apart. There are no non-floriferous bracts at the base of the rachis.

A variety of colour forms exist. Jeffrey gave an account of the different colours that (Wood 2001). There are 2 spots at the base of the mid-lobe which are usually coloured pink, purple, maroon, brown or orange brown. Dorsal sepals are an oblong-elliptic shape and have acute apices. Dorsal sepals measure 2.2-4 mm long and 0.8-1.1 mm wide. Dorsal sepals have entire margins, are concave, minutely papillose at its base and are 3-veined. Lateral sepals are an oblong-ovate shape and have acute apices. Lateral sepals measure 2-4 mm long and 1.2-1.5 mm wide. Lateral sepals have entire margins, are minutely papillose at their bases and are 1 or 2 veined. Petals are a narrowly elliptic or oblong-elliptic shape and have acute apices. Petals measure 1.6-3.6 mm long and 0.8-1 mm wide. Petals have entire margins, are minutely papillose at their bases and are 3-veined. Labella are 5-lobed and measure 1.6-3 mm long and 2.5-4 mm at their widest point. There are 3 veins, the median vein is prominent. Side lobes are spreading or erect and an oblong shape with obtuse or truncate apices. Side lobe margins can be erose and the side lobes can also be shaped like small triangular-falcate teeth. Mid lobes are cruciform, the side lobules spreading, retrorse and an oblong, rounded to oblong-falcate shape with obtuse apices. The median lobule is cuspidate and has an acuminate or deflexed and ascending apex. The margins on the labellum are usually entire. There are 2 keels that are joined and form an upside-down U shape near the base of the labellum; the keels terminate at the base of the side lobes. The column is slender and measures 1.4-2 mm long. There is no column foot. Apical hoods are short, a narrowly ovate shape and have obtuse to subacute apices. Apical hoods have entire margins. Stelidia grow from the base of columns and are equal to or exceed column apices. Stelidia are an oblong-linear shape and have obtuse apices that are hooked (hamate).

Herbarium Specimens

Holotype

BM (*Dendrochilum gibbsiae*)

Specimen (*Dendrochilum gibbsiae*)
Specimen (*Dendrochilum kinabuluense*)

Ames

Specimen 98799 (photo) (*Dendrochilum quinquelobum*)

Isotype

New York Botanical Garden (NY)

Specimen 8745 (Photo) (*Dendrochilum quinquelobum*)

Royal Botanic gardens Kew (K)

Specimen K000078191 (drawing)
Specimen K000078189 (photo) (*Dendrochilum kinabuluense*)
Specimen K000078188 (photo)
Specimen K000078190 (photo)

BM

BO

SING

Other herbarium specimens

National Herbarium Netherlands, Leiden (L)

Specimen L0269563
Specimen L0269564
Specimen L0269565
Specimen L0269566
Specimen L0269567
Specimen L0269568
Specimen L0269569
Specimen L0269570
Specimen L0269571
Specimen L0269572
Specimen L0269573
Specimen L0269574
Specimen L0322489
Specimen L0322490
Specimen L0322491
Specimen L0322492
Specimen L0322493

A

The Royal Botanic Garden of Edinburgh (E)

Specimen E00050129
Specimen E00050127
Specimen E00050130
Specimen E00050127
Specimen E00050128
Specimen E00237779
Specimen E00233098
Specimen E00050050

Royal Botanic Gardens Kew (K)

Specimen 61442.000
Specimen 60417.000
Specimen 70774.000
Specimen 61497.000
Specimen 49666.000
Specimen 49438.000
Specimen K000078186
Specimen 61443.00
Specimen 60416.000
Specimen K000078187 (photo) (*Dendrochilum quinquelobum*)

SAR

KEP

SAN

AMES

Specimen 98760 (drawing of the type)
Specimen 98772 (drawing of the type) (*Dendrochilum kinabuluense*)

HBG

Scent

The flowers can be scented or unscented. The scent is described to be like oranges.

Flowering Season

Flowering plants have been observed in the wild all year.

Cultivation

This species is known in cultivation but is very rare and difficult to procure.

Similar Species

Dendrochilum hastilobum
Dendrochilum dolichobrachium
Dendrochilum cruciforme var. cruciforme (see this page for the differences)
Dendrochilum exasperatum (see this page for the differences)
Dendrochilum hosei (see this page for the differences)

Other Information

Jeffrey Wood wrote (1997) that this is the most widespread species is section *Cruciformia*.

Dendrochilum kinabuluense was added to the synonymy of *Dendrochilum gibbsiae* by Jeffrey Wood on account that the flowers look the same. Rolf described *Dendrochilum kinabuluense* on account of its narrower leaves and inflorescence. Ames wrote the following "From a study of drawings of this species preserved in my herbarium, it would seem that D. *gibbsiae* is a very near ally of D. *kinabuluense* Rolfe. There is reason to believe that the examination of more ample material will indicate that the characters relied on for the separation of these species will break down" (Ames 1920).

Dendrochilum quinquelobum was added to the synonymy of *Dendrochilum gibbsiae* by Jeffrey Wood on account of the flowers appearing the same. Ames wrote that "*Dendrochilum quinquelobum* differs from its allies by the strongly reflexed, falcate terminal lobes of the lip beyond which the fifth lobe or large cusp protrudes. The lip of D. *gibbsiae* and of D. *kinabuluense* resembles more closely the lip of D. *haslamii* than that of D. *quinquelobum*." Ames also wrote in his Orchidaceae Facsimile 6 "A near relative of D. *gibbsiae* or D. *kinabuluense* from which species it differs by the lobbing of the labellum, the lateral lobes being strongly curved backward. Intensive studies of more material than I have been able to examine may reveal closer relationships between D. *quinquelobum* and the species described by Rolfe than now seem likely. From careful drawings of D. *gibbsiae* and D. *kinabuluense* preserved in my herbarium, their affinity is extremely close" (Ames 1920).

Dendrochilum gibbsiae is a variable species. Jeffrey Wood wrote that 3 specimens collected from the Gunung Mulu National Park in Sarawak differ by having an elongated rhizome, dwarfed in habit and shorter leaf blades that measure 3.3-5.5cm long and 0.4-0.6cm wide. The 3 plants were collected from shrubbery on an exposed limestone ridge at 1,500 meters on Mount Api.

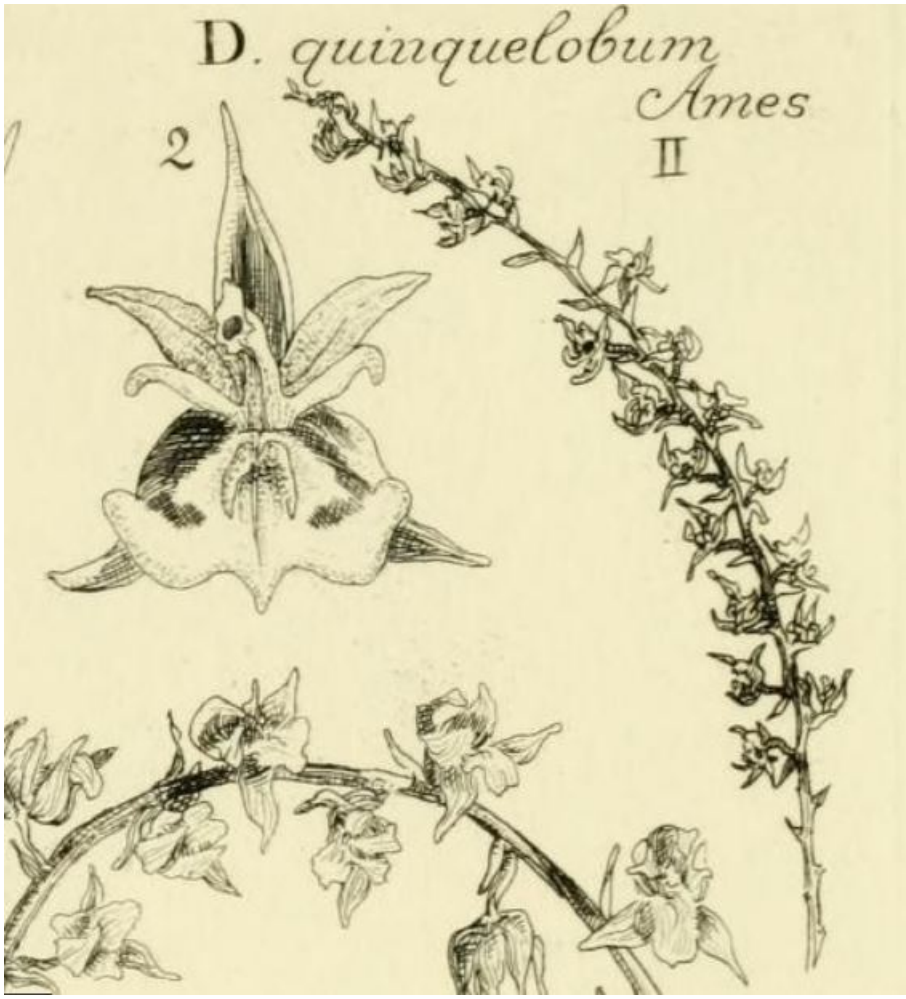
The leaves contain crystalline calcium oxalate bodies within their leaves. The bodies are also present in related species as well.

The photo above was taken by Chien C Lee of the Mount Mulu variant and is used with permission ©. Please access his website for further wildlife and botanical photos, www.chienclee.com

The images above were taken by Malcolm Perry of a plant at the Hortus Botanicus and are used with permission ©.

The image above was taken by Rogier van Vugt of a plant at the Hortus Botanicus and is used with permission ©.

This photo was taken by the late Jim Comber and bequeathed to the Royal Botanic Gardens Kew. The photo is reproduced with permission from the Director, Royal Botanic Gardens, Kew



Reference –

AMES, Oakes. 1920, Illustrations and studies of the Family Orchidaceae Facsimile 6, The Orchids of Mount Kinabalu British North Borneo, Ames Botanical Laboratory, North Easton, Massachusetts, Boston.

WOOD, Jeffrey. 1997, Orchids of Borneo volume 3. The Sabah Society, Kota Kinabalu, Malaysia.

WOOD, Jeffrey. Dendrochilum of Borneo, 2001. Natural History Publications (Borneo), Malaysia.

World Checklist of Selected Plant Families. 17 January 2009. The Board of Trustees of the Royal Botanic Gardens, Kew. Published on the Internet; http://www.kew.org/wcsp/ accessed **17 January 2009**.