Sylvia Strigari

Dendrobium cymbidioides

Text by Franco Pupulin and Jaime Aguilar V./Watercolor by Sylvia Strigari

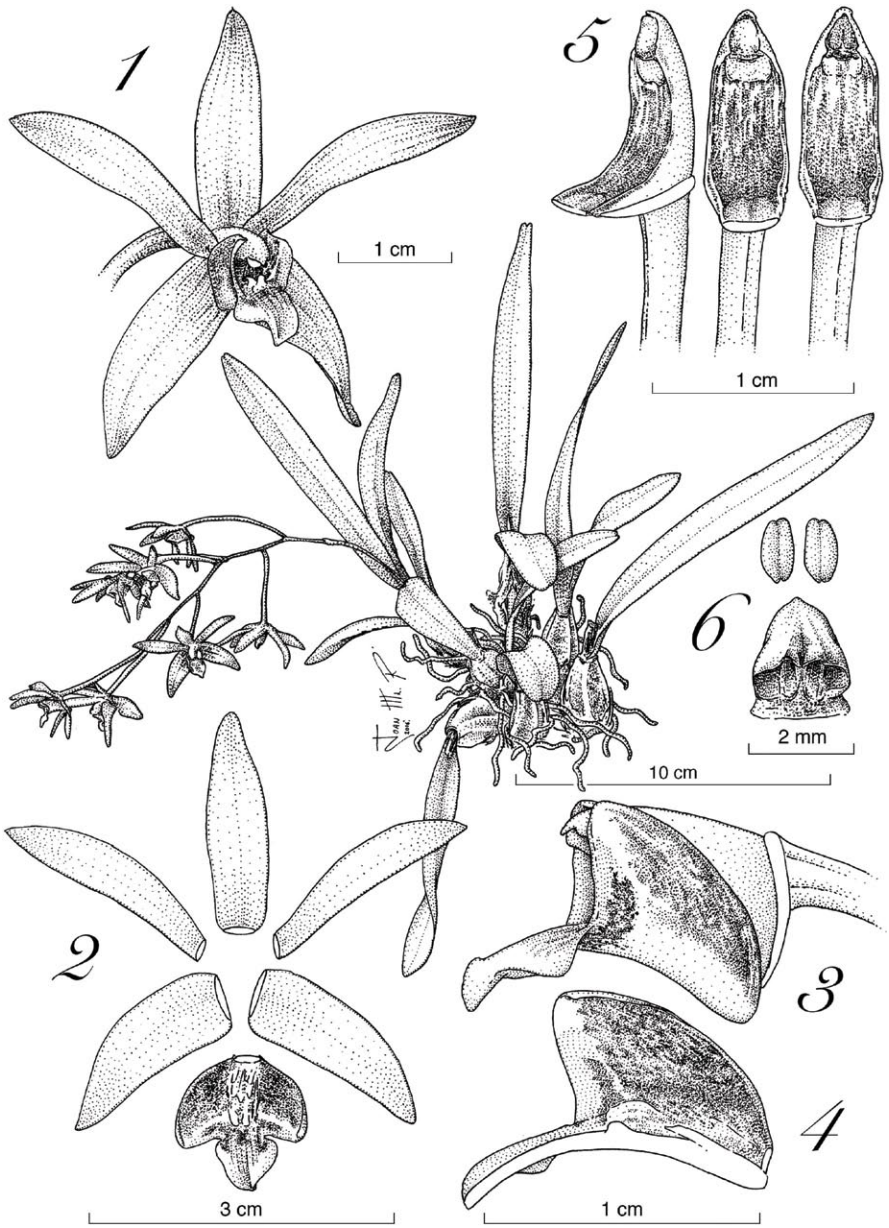
Tribe Podochileae
Subtribe Dendrobiinae
Genus Dendrobium *Swartz*

Dendrobium cymbidioides (Blume) Lindl., Gen. Sp. Orchid. Pl. 77. 1830. Bas.: *Desmotrichum cymbidioides* Blume, Bijdr. Fl. Ned. Ind. 332. 1825. Homotypic synonyms: *Callista cymbidiodes* (Blume) Kuntze, Revis. Gen. Pl. 2:654. 1891. *Sarcopodium cymbidioides* (Blume) Rolfe, Orchid Rev. 18:238. 1910. *Katherinea cymbidioides* (Blume) A.D.Hawkes, Lloydia 19:95. 1956, *Epigeneium cymbidioides* (Blume) Summerh., Kew Bull. 12(2): 262, 1957. Type: Indonesia. Java: "crescit: in sylvis altioribus montium Gede et Salak," *C.L. Blume s.n.* (holotype, L). Heterotypic synonyms: *Dendrobium marginatum* Teijsm. & Binn., Natuurk. Tijdschr. Ned.-Indië 5:490. 1853. *Callista marginata* (Teijsm. & Binn.) Kuntze, Revis. Gen. Pl. 2: 655. 1891. Type: Indonesia. Java: cult. at the Buitenzorg (Bogor) botanical garden (holotype, BO).

Epiphytic, erect, subcaespitose to repent *herb* up to 30 cm tall. *Rhizome* fleshy, freely branched, covered with rudimentary, brown cataphylls, bearing well-spaced pseudobulbs. *Roots* flexuous, to 2 mm in diameter. *Pseudobulbs* ovoid to oblong, subtetragonous, green to bright greenish yellow, somewhat ancipitous along the ribs, 3–7 × 1.4–2.4 cm, two- (rarely three-) leaved, enclosed at the base by 3–4 triangular, acute, papyraceous, reddish brown sheaths. *Leaves* oblong to narrowly lanceolate, fleshy-coriaceous, bright green and somewhat rugulose on the upper surface, matte grayish green abaxially, bilobed and obtuse at apex, distinctly conduplicate at the cuneate base, the midvein strongly protruding on the underside, 9–20 × 2.0–2.5 cm. *Inflorescence* a terminal, distichous, erect-arched, simultaneously 3- to 10-flowered raceme, slightly exceeding the length of the leaves, to about 15 cm long, purple-red; peduncle terete, ca. 7 cm long, covered at the base by a triangular, pointed, clasping bract. *Floral bracts* small, hyaline, triangular, acute, to 6 mm long, pale green, sometimes spotted with rose. *Pedicellate ovary* terete, white, tinged with rose at the base, 3.6–4.3 cm long. *Flowers* spreading, fleshy, with sepals and petals pale yellow or straw-colored, the lip white to pale yellow, suffused with purple on the lateral lobes, with two confluent golden yellow blotches at the base of the midlobe; the disc and the keels white. *Dorsal sepal* narrowly lanceolate, acute, 2.3–2.5 × 0.6–0.7 cm. *Lateral sepals* obliquely lanceolate-subtriangular, slightly falcate, acute, 2.0–2.3 × 0.7–0.9 cm, forming a short, rounded mentum around the base of the lip. *Petals* oblong-ligulate, acute, distinctly longer than the sepals, 2.5–2.8 × 0.3–0.4 cm. *Lip* trilobed, 1.5–1.8 × 1.3–1.6 cm across the lateral lobes; side lobes erect, concave, flanking the column, broadly semiobovate or obtriangular, rounded in front; midlobe shortly ovate-subcordate, obtuse, convex, broader than long; disc with three series of basal, low, linear calli, straight or deeply bifid. *Column* subterete, slightly curved, flat on the underside, ca. 7 mm long, provided with a straight foot 4–5 cm long. *Anther cap* deeply cucullate, obtriangular, truncate, two-celled. *Pollinia* four in two pairs, narrowly oblong. *Fruit* not seen.

Oh well, we will eventually treat this beautiful species as a member of *Dendrobium* section *Sarcopodium*. In recent years, morphologic and molecular studies have shown that the genus *Epigeneium* forms a branch with the genus *Dendrobium* (Schuiteman 2011, 2014; Xiang 2013). The minor differences in both genetics and morphology convinced taxonomists to merge it with the latter, favoring the use of a broad generic concept of *Dendrobium* with an improved infrageneric classification at sectional level. Within *Dendrobium*, sect. *Sarcopodium* is a small basal group of species, sister to the main body of the genus, which in turn consists of two other large clades, taxonomically called the northern/Asian clade and the southern/Australasian clade (Schuiteman 2014), which are not of concern to us here. Due to the phylogenetic position of the less than 40 species belonging to section *Sarcopodium*, basal to some other 1,400 species of "true" *Dendrobium*, we see no difficulty if someone would prefer not changing the *Epigeneium* labels on their plants. *Dendrobium* sect. *Sarcopodium* groups plants with creeping rhizome and well-developed pseudobulbs of a single internode, the inflorescence arising at the apex of the pseudobulb and long-lasting flowers with a lip provided with two or more keels extending to at least halfway on the lip blade. The section is typified by *Dendrobium amplum,* a typically "epigeneioides" small-sized species, native from China south to Thailand. Biogeographically, species of section *Sarcopodium* are grossly endemic to the western region of the Philippines and all the areas to the west of Sulawesi, where several sections of the northern/Asian *Dendrobium* are also restricted in distribution (Schuiteman 2014).

The great Dutch botanist (German by birth) Carl (Karl) Ludwig Blume (1796–1862) described *Desmotrichum cymbidioides* in his *Contributions to the flora of Dutch Indies*, which he published between 1825 and 1827 during his stay in Java, where he was employed as the deputy director of agriculture at the botanic garden in Bogor (Buitenzorg). The original material was collected in the volcanic mountains of Salak (7,240 ft [2,211 m]) and Gede (9,690 ft [2,958 m]), which surround the city of Bogor in West Java. Blume assigned his new species to the genus *Desmotrichum*, which he expressly created to gather a group of caulescent *Dendrobium* species with distinct pseudobulbs and terminal inflorescences. Among the 12 new species proposed in *Desmotrichum*, *Des*. *cymbidioides* belongs to the group with two-leaved pseudobulbs and racemose inflorescences (Blume 1825). The species has had a lot of taxonomic adventures. The original name *Desmotrichum* by Blume in the *Orchidaceae* was rejected in favor of *Desmotrichum* Kuetzing, a brown alga of the family Myriotrichiaceae. Anticipating the conclusions of contemporary botanists, as soon as 1830 John Lindley recombined *Des*. *cymbidioides* into *Dendrobium*, assigning it to a group of species with pseudobulbous rhizome "close to *Bulbophyllum*" (Lindley 1831). In 1891 Carl Ernst Otto Kuntze (1843–1907) transferred it to the genus *Callista*, a genus described by the Portuguese Jesuit missionary and botanist João de Loureiro (1717–1791) almost 20 years before the birth of *Dendrobium*. Botanists preferred however to conserve the name *Dendrobium*, and *Callista* passed into the lines of the rejected names. For a long time, our species has been known as a member of the genus *Epigeneium*,



Based on Plastid and Nuclear Sequences. *Molecular Phylogenetics and Evolution* 69:950–960.

Dendrobium cymbidioides. The plant.
1. Flower.
2. Dissected perianth.
3. Column and lip, lateral view.
4. Lip, longitudinal section.
5. Column, ¾ and ventral views (emasculate on the right).
6. Pollinia and anther cap.

All drawn from *JBL-07505* (JBL-spirit) by Joan Manuel Ramírez Barquero.

created in 1932 by the French botanist Francois Gagnepain (1866–1952) to group *Dendrobium fargesii* (selected as the type of the genus) and four other new species from Indochina, characterized by the insertion of the petals decurrent on the chin of the lip and the lateral sepals inserted toward the extremity of the chin and decurrent toward the column (Gagnepain 1932). It was Kew botanist Victor Samuel Summerhayes (1897–1974) who transferred *Des. cymbidioides* to *Epigeneium* in 1957. In 1956, Alex D. Hawkes (1927–1977) proposed the new genus *Katherinea* for the same group of species, but his proposal did not receive general support. The Dutch botanists Johannes Elias Teijsmann and Simon Binnendijk described the species again, with the name *Dendrobium marginatum*, in their account on new orchids grown at the national botanical garden of Buitenzorg (Bogor) (Teijsmann and Binnendijk 1853).

Dendrobium cymbidioides is known from the cloud forests of the Malay Peninsula, Sumatra and Java, where it grows as a cold-growing species at elevations of 7,200–9,200 feet (2,200–2,800 m). It blooms during the spring in its natural habitats, a habit that the species maintains in the tropical regions of the northern hemisphere.

The plant that we grow at the botanical garden, and which Sylvia has portrayed, is a very old and venerable specimen that originally belonged to the founder of the garden, Charles H. Lankester, and was passed on in his family generation after generation. Charles' nephew, Ricardo Lankester, gifted the plant to the botanical garden a few years ago. It was outgrowing a large 10.7–square foot (1–sq m) wood basket, and it badly fit into a pickup to reach our collections. Since then, it has grown more and more, and when in flower the number of the single flowers is almost uncountable, easily exceeding 1,000 lightly scented blossoms. While small plants prefer being grown in bright light, but protected from direct sun, our specimen happily thrives in the garden outside the greenhouse, in direct sun. The plants are best suited for the intermediate greenhouse or the warmest corner of the cool greenhouse, and may be grown both on large slabs and in a basket with quite large bark chunks, leaving enough space for its quick and robust growth. In any case, even moisture and high humidity must be provided year round, with generous fertilization during the growing season.

References

Blume, C.L. 1825. *Bijdragen tot de flora van Nederlandsch Indië.* Part 7. Ter Lands Drukkerij, Batavia, Dutch East Indies.

Lindley, J. 1831. *The Genera and Species of Orchidaceous Plants.* J. Ridgway, London.

Gagnepain, M.F. 1932. Huit Genres Nouveaux d'Orchidées Indochinoises. *Bulletin du Muséum d'Histoire Naturelle* sér. 2,4(5):593–594.

Schuiteman, A. 2011. *Dendrobium* (Orchidaceae): To Split or Not to Split? *Gardens' Bulletin Singapore* 63(1–2):245–257.

Schuiteman, A. 2014. *Dendrobium*. p. 51–100. *In:* M.A. Pridgeon, P.J. Cribb, M.W. Chase, and F.N. Rasmussen, editors. *Genera Orchidacearum, 6: Epidendroideae (Part Three)*. Oxford University Press, Oxford, United Kingdom.

Teijsmann, J.E. and S. Binnendijk. 1853. Nieuwe plantensoorten behoorende tot de orde der Orchideen in slands plantentuin te Buitenzorg. *Natuurkundig Tijdschrift voor Nederlandsch-Indië* 5:487–494.

Xiang, X.G., A. Schuiteman, D.Z. Li, W.C. Huang, S.W. Chung, J.W. Li, H.L. Zhou, W.T. Jin, Y.J. Lai, Z.Y. Li, and X.H. Jin. 2013. Molecular Systematics of *Dendrobium* (Orchidaceae, Dendrobieae) from Mainland Asia