

## Two Species of *Dendrobium* Section *Formosae* (Orchidaceae) from Vietnam

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遊川知久\* : ベトナム産セッコク属 *Formosae* 節の 2 種

*Dendrobium* Sw. section *Formosae* (Benth. & Hook. f.) Hook. f. is a horticulturally important group to which about 50 species are currently assigned. Species belonging to this section are found from the Himalaya in the west to the Philippines and Sulawesi in the east. Section *Formosae* is usually defined by the black hairs on the leaf blades and leaf sheaths. Most species from the Philippines, however, do not exhibit this feature. In fact, only the hard-textured flowers with white, greenish or yellow perianth lobes characterize the section. Phylogenetic analyses of macromolecular characters have indicated that this section does not represent a monophyletic group (Wongsawad *et al.* 2001, Yukawa 2001, Yukawa unpublished). So far, ten species of *Dendrobium* section *Formosae* have been recorded from Vietnam (Seidenfaden 1992, Yukawa 2002). Two more Vietnamese species in this group are recorded below. One is *Dendrobium trankimianum* Yukawa, a new species closely related to *Dendrobium draconis* Rchb. f. Although the other, *Dendrobium kontumense* Gagnep., is a previously described species, it has been neglected for long time and erroneously interpreted (e.g., Seidenfaden 1985). I thus provide full description and illustrations of the species based on the material on hand.

***Dendrobium trankimianum*** Yukawa, *sp. nov.* TYPE: Vietnam. Borders of Lâm Dong, Khanh Hoa & Ninh Hoa Provinces, alt. 800–1000 m. Flowering in cultivation April 2000, *Hort. Tsukuba Botanical Garden accession number 127511* (Holotype: TNS). Figs. 1 and 2.

Affine *Dendrobium draconis* Rchb. f., sed caulibus tenuioribus, floribus minoribus, petalis oblanceolatis-obovatis, et forma labellis disimili distinguendum.

Plant erect-slightly patent, producing many stems. **Roots** elongate, branching, white to grey, to 2 mm in diameter. **Stems** cane-like, clustered, terete-slightly fusiform, weakly sulcate in age, leafy throughout, tightly covered by persistent leaf sheaths, with 10 to 18 internodes, to 43 cm long, to 7 mm in diameter. **Leaves** bearing 7 to 15 fresh ones, distichous, alternate; blade conduplicate, patent, coriaceous, narrowly ovate-lanceolate, unequally bilobed at apex, dark green, both surfaces with dense hairs, adaxial hairs brownish and rubbing off with age, abaxial hairs blackish and turning white with age, 2.1–8.3 cm long, 0.7–2.2 cm wide; sheaths clasping, brownish green with dense blackish hairs, hairs turning white with age, to 3.5 cm long. **Inflorescences** axillary on apical part of stems, bearing 1 or 2 flowers; peduncle inconspicuous, entirely enclosed by bracts, 4 mm long; floral bracts oblanceolate-elliptic, obtuse, concave, brownish, abaxial surface with brown hairs, adaxial surface glabrous, to 10 mm long, 6 mm wide. **Flowers** widely opening, glossy, thick, rigid; sepals and petals white; labellum white, disc and lateral lobes suffused and nerved with sanguine red; column and operculum reddish; pedicellate ovary pale green. **Dorsal sepal**

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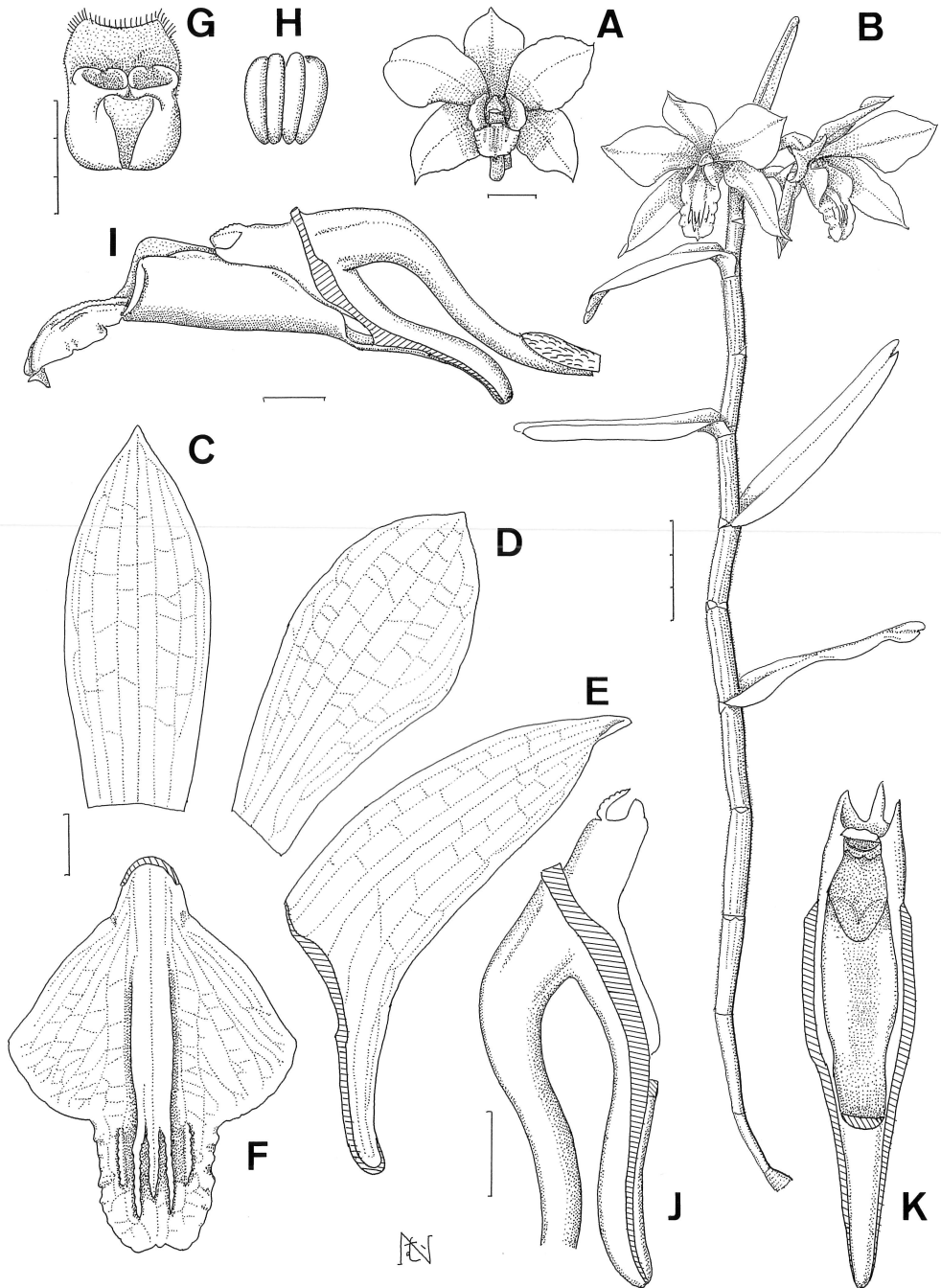


Fig. 1. *Dendrobium trankimianum* Yukawa. A. Flower, front view; B. Habit; C. Dorsal sepal; D. Petal; E. Lateral sepal; F. Labellum; G. Operculum; H. Pollinia; I. Labellum and column, side view; J. Column and column foot, side view; K. Column and column foot, from below. Drawn from holotype (*Hort. Tsukuba Botanical Garden accession number 127511*) by M. Nakajima. Scale bar = 3 cm (B), 1 cm (A), 5 mm (C-F, I-K), or 3 mm (G, H).



Fig. 2. Flowering individual of *Dendrobium trankimianum* Yukawa. Photograph from holotype (*Hort. Tsukuba Botanical Garden accession number 127511*).

obovate-oblongate, abruptly acute, abaxial surface costate, 32 mm long, 12 mm wide. **Lateral sepals** obliquely triangular-falcate, acute-acuminate, abaxial surface costate, 33 mm long along anterior margin, 14 mm wide at base; mentum conical, slightly sigmoid, making an acute angle with ovary, 19 mm long. **Petals** oblongate-obovate, abruptly acute, abaxial surface slightly costate, 31 mm long, 15 mm wide. **Labellum** three-lobed, shortly clawed, adaxial surface with a broad, plate-like keel between side lobes, abaxial surface shallowly sulcate, 33 mm long, 23 mm wide; side lobes erect, obliquely triangular, obtuse, 17 mm long, 8 mm wide; mid lobe oblong, apiculate, weakly undulate, adaxial surface with five verrucose keels, 11 mm long, 10 mm wide. **Column** glabrous, dilated at base, 8 mm long, 4.5 mm wide at base; stielidia short, triangular-falcate, acute; column foot grooved, 9 mm long; operculum cucullate, quadrate, hirsute below, dorsally sulcate, densely papillose, 3.9 mm long, 3.1 mm wide; pollinia 4, in 2 pairs, 2.5 mm long. **Pedicellate ovary** clavate, slightly sulcate, glabrous, 30 mm long.

**ETYMOLOGY:** The specific epithet honours Tran Kim Khanh, who noticed the distinctiveness of this species.

*Dendrobium trankimianum* is closely related to *Dendrobium draconis* also from Indochina but can be distinguished by the following characters: 1) thinner, terete stems; 2) smaller perianth lobes; 3) oblongate-obovate petals; 4) more-developed lateral lobes of the labellum; 5) a shorter mid lobe of the labellum; and 6) different callus structure of the labellum.

#### ***Dendrobium kontumense* Gagnep.**

Bull. Soc. Bot. France **79**: 165 (1932). – Gagnepain, Fl. Gen. Indo-chine **6**: 239 (1934); Seidenfaden, Contrib. Rev. Orchid Fl. Cambodia Laos Vietnam, 46 (1975); Ban & Huyen, Thuc Vat Tay Nguyen, 199 (1983). Figs. 3 and 4.

*Dendrobium virgineum* auct. non Rchb. f.: Seidenfaden, Opera Bot. **83**: 112 p.p. (1985); Averyanov, Prelim. List Vietnamese Orchids **1**: 159 p.p. (1988); Averyanov, Vasc. Pl. Synopsis Vietnamese Fl. **1**: 83 p.p. (1990); Seidenfaden, Opera Bot. **114**: 221 p.p. (1992); Averyanov & Averyanova, Updated Checklist Orchids Vietnam, 31 p.p. (2003).

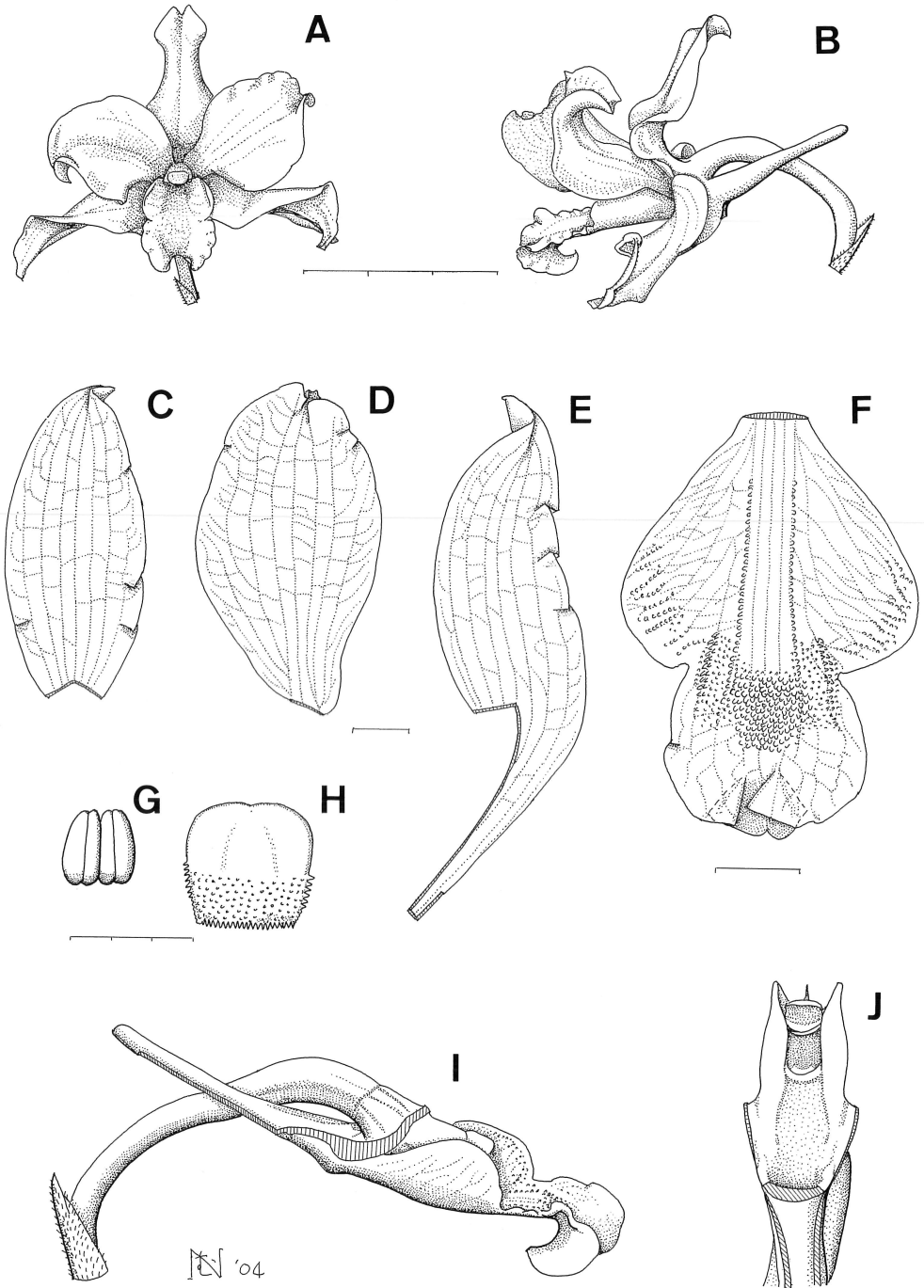


Fig. 3. *Dendrobium kontumense* Gagnep. **A**. Flower, front view; **B**. Flower, side view; **C**. Dorsal sepal; **D**. Petal; **E**. Lateral sepal; **F**. Labellum; **H**. Pollinia; **G**. Operculum; **I**. Labellum and column, side view; **J**. Column and column foot, from below. Drawn from cultivated material (*Hort. Tsukuba Botanical Garden* accession number 144422) by M. Nakajima. Scale bar = 3 cm (**A**, **B**), 5 mm (**C**-**F**, **I**, **J**), or 3 mm (**G**, **H**).



Fig. 4. Flowering individual of *Dendrobium kontumense* Gagnep. Photograph from cultivated material (*Hort. Tsukuba Botanical Garden accession number 118269*).

Plant erect-slightly patent, producing many stems. **Roots** elongate, branching, white to grey, to 2.1 mm in diameter. **Stems** cane-like, clustered, narrowly fusiform, slightly flexuous, weakly sulcate in age, leafy throughout, tightly covered by persistent leaf sheaths, with 7 to 18 internodes, to 40 cm long, to 11 mm in diameter. **Leaves** bearing 5 to 16 fresh ones, distichous, alternate; blade conduplicate, patent, coriaceous, lanceolate, unequally bilobed at apex, dark green, both surfaces with dense hairs rubbing off with age, adaxial hairs brownish, abaxial hairs blackish, 1.8–9.1 cm long, 0.9–1.9 cm wide; sheaths clasping, brownish green, hairs blackish and rubbing off with age, to 3.2 cm long. **Inflorescences** suberect-patent, both terminal and axillary on apical part of stems, bearing 1 or 2 flowers; peduncle inconspicuous, entirely enclosed by bracts, 3 mm long; rachis 5 mm long, floral bracts obliquely lanceolate-triangular, acuminate, concave, brownish, abaxial surface with brown hairs, adaxial surface glabrous, to 10.5 mm long, 4 mm wide. **Flowers** glossy, sweetly scented, 4.3–4.8 cm in diameter; sepals and petals ivory white; labellum golden yellow, veins orange, apical part ivory white; column and operculum golden yellow; column foot reddish orange; pollinia bright yellow; pedicellate ovary ivory white. **Dorsal sepal** ovate-lanceolate, abruptly acute, abaxial surface costate, recurved, 24–26 mm long, 9–11 mm wide. **Lateral sepals** obliquely lanceolate-triangular, abruptly acute to mucronate, abaxial surface costate, twisted, recurved, 26–28 mm long along anterior margin, 11 mm wide at base; mentum conical, making an acute angle with ovary, straight to upcurved, 23–28 mm long. **Petals** elliptical-rhombic, obtuse, abaxial surface slightly costate, undulate, recurved, 26–27 mm long, 14–16 mm wide. **Labellum** three-lobed, shortly clawed, adaxial surface pubescent at basal part, abaxial surface slightly costate, 26–28 mm long, 17–19 mm wide; side lobes erect, rounded, adaxial surface sparsely verrucose, 14–16 mm long, 4.5–6 mm wide; mid lobe widely obovate, obtuse, undulate, adaxial surface densely verrucose except for margins, 10–11 mm long, 11–14 mm wide. **Column** glabrous, dilated at base, 7–8 mm long, 5.5–6 mm wide at base; stelia short, triangular-falcate, obtuse; column foot grooved, papillose, 4.5–5 mm long; operculum cucullate, quadrate, hirsute below, dorsally sulcate, densely papillose, 3–3.2 mm long, 3–3.1 mm wide; pollinia 4, in 2 pairs, 1.8 mm long. **Pedicellate ovary** clavate, slightly sulcate, glabrous, 32–41 mm long.

**DISTRIBUTION:** Vietnam. Kontum Prov., between Giang Lo and Dak To, *Poilane 18280* (Holotype: P); Lâm Dong Prov., Lang Bian Mountain, *S. Khrukerd KV-0012* (TNS!); sine loco, *Hort.*

*Tsukuba Botanical Garden accession number 118269* (TNS!); sine loco, *Hort. Tsukuba Botanical Garden accession number 144422* (TNS!).

Although Seidenfaden (1985) reduced *Dendrobium kontumense* to a synonym of *Dendrobium virgineum* Rchb. f., the former is distinguishable from the latter by a longer mentum, a differently shaped labellum, golden yellow colour of the labellum, and densely verrucose calli of the labellum. *D. kontumense* is also closely related to *D. draconis* but the former differs in its smaller perianth lobes, elliptical-rhombic petals, more-developed lateral lobes of the lip, a shorter, widely obovate mid lobe of the lip, densely verrucose calli of the labellum, and different flowering time (September to November).

### Acknowledgements

I would like to thank Tran Kim Khanh and Subhkon Khruerkerd for providing the material and Mutsuko Nakajima for preparing the illustration. I also thank Kazuhiro Suzuki for skilful cultivation of the material. This study is partly supported by a Grant-in-Aid to Scientific Research from the Japan Society for the Promotion of Science (15405014).

### Summary

Two species in *Dendrobium* Sw. section *Formosae* (Benth. & Hook. f.) Hook. f. are recorded from Vietnam. *Dendrobium trankimianum* Yukawa, a new species described here, is closely related to *Dendrobium draconis* Rchb. f. but can be distinguished by the following characters: 1) thinner, terete stems; 2) smaller perianth lobes; 3) oblanceolate-obovate petals; 4) more-developed lateral lobes of the labellum; 5) a shorter mid lobe of the labellum; and 6) different callus structure of the labellum. *Dendrobium kontumense* Gagnep. has been misinterpreted as a synonym of *Dendrobium virgineum* Rchb. f. The former is distinguishable from the latter by 1) a longer mentum; 2) a differently shaped labellum; 3) golden yellow colour of the labellum; and 4) densely verrucose calli of the labellum.

### 摘要

ベトナム産 *Dendrobium* (セッコク属) *Formosae* 節の 2 種を記載する。1 種は新種 *Dendrobium trankimianum* Yukawa で、近縁の *Dendrobium draconis* Rchb. f. から、茎が細いこと、花被片が短いこと、側花弁が倒皮針-倒卵形であること、唇弁側裂片が発達すること、唇弁中裂片が短いこと、唇弁のカルスが異なることによって、よく区別できる。*Dendrobium kontumense* Gagnep. はこれまで *Dendrobium virgineum* Rchb. f. の異名とされてきたが、メンタムが長いこと、唇弁の形が異なること、唇弁が黄金色であること、唇弁のカルスがいぼ状になることから、別種とすることが妥当である。

### References

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210.

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