

Cordiglottis longipedicellata (Orchidaceae), a new species from Vietnam

Ritesh Kumar Choudhary¹, Tran The Bach², Do Van Hai², Bui Hong Quang²,
Luu Van Nong³, Pankaj Kumar⁴, Sang-Hong Park¹ & Joongku Lee^{1,*}

¹ International Biological Material Research Center, Korea Research Institute of Bioscience & Biotechnology, 125 Gwahak-ro, Yuseong-gu, Daejeon 305-806, South Korea (*corresponding author's e-mail: joongku@kribb.re.kr)

² Institute of Ecology & Biological Resources, Vietnam Academy of Science & Technology, 18-Hoang Quoc Viet, Cau Giay, Hanoi-10000, Vietnam

³ Hon Ba Nature Reserve, Khanh Hoa-57000, Vietnam

⁴ Orchid Conservation Section, Flora Conservation Department, Kadoorie Farm and Botanical Garden Corporation, Tai Po, New Territories, Hong Kong

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Cordiglottis longipedicellata Joongku Lee, T.B. Tran & R.K. Choudhary, a new species of Orchidaceae from Vietnam is described and illustrated. It is morphologically most similar to *C. pulverulenta*, but differs in its floral morphology and in having a longer pedicel. Colour photographs, a table comparing the floral structure of the new species with supposedly closely allied species and a key are provided to facilitate species identification. The present paper is also the first report of the genus *Cordiglottis* in the Indo-Chinese region.

Cordiglottis is a small genus in the family Orchidaceae (subfamily Epidendroideae, tribe Vandaeae, subtribe Aeridinae), with seven species known so far, which are distributed in western Malesia (Mabberley 2008). The genus is closely allied to *Thrixspermum* and is characterized, among other features, by a prominent column-foot which is articulate with the lip, a fleshy, powdery or hairy callus in the sac, a shorter column and a longer foot.

During floristic exploration work in HonBa Nature Reserve of Khanh Hoa Province in Vietnam (Fig. 1), a peculiar species of *Cordiglottis* was found, which did not match any of the seven previously described species in the genus.

After thorough scrutiny of the relevant literature (Garay 1972, Seidenfaden & Wood 1992, Ho 1993), the taxon was found to be a new species which is described here. A taxonomic key to the species of *Cordiglottis* is given to aid identification. The present paper provides the first record of the genus *Cordiglottis* from the Indo-Chinese region.

Cordiglottis longipedicellata Joongku Lee, T.B. Tran & R.K. Choudhary, *sp. nova* (Figs. 2 and 3)

HOLOTYPE: Vietnam. Khanh Hoa Province, HonBa Nature



Fig. 1. Map showing the type locality of *Cordiglottis longipedicellata* in Vietnam.

Reserve, J. Lee et al. 10 April 2012 (HIKK, 1316 HN; isotype KRIB!).

ETYMOLOGY: The specific epithet refers to the pedicel, which is almost three times longer than in the other species of the genus.

Epiphytic herb, up to 20 cm long. Leaves 5–7, 18–20 × 1–1.2 cm, laterally flattened, slightly curved, fleshy, dark green, tips acute, base overlapping. Inflorescence 2-flowered, pendulous, 2–2.3 cm long; peduncle 0.5–0.8 cm long, glabrous. Floral bracts triangular, thin, apex acute, 1.5–2 × 1–1.5 mm. Flowers 2–2.5 cm diameter. Sepals white, translucent, glabrous, apex obtuse; dorsal sepal elliptic, 4–4.5 × 1.8–2 mm, lateral sepals elliptic-ovate, 4–4.5 × 1–1.5 mm, contracted at base. Petals white, similar to sepals, ovate, 5–5.5 × 1–1.7 mm. Lip white with purple spots at base and on margin of side lobes, disc and callus yellow, saccate, glabrous, more or less sigmoid, without a spur, 3-lobed, 4–5 × 2–2.5 mm; callus fleshy, glabrous, apex spatulate; side lobes erect, slightly angular-round, 3–4 mm long; midlobe almost flat at apex, slightly decurved, 6–7 × 3–4 mm. Column 2–2.2 mm long; foot prominent, nearly as long; anther cap round, 1–1.5 mm long; pedicel and ovary 1–1.2 cm long. Capsules narrowly cylindrical, 4–5 mm long, ca. 5 mm thick, dark green, opening by



Fig. 2. *Cordiglottis longipedicellata*. — A: Habit. — B: Inflorescence. — C: Anterior view of flower. — D: Posterior view of flower. — E: Flower in front view. — F: Fruit.

longitudinal slits, not fleshy. Flowers and fruits from April to May.

DISTRIBUTION AND HABITAT ECOLOGY: The new species occurs in HonBa Nature Reserve in Khanh-Hoa Province of Vietnam. It was found growing as an epiphyte on a medium-sized tree in pristine mixed evergreen and sub-temperate forest along the hillocks at about 1500 m a.s.l. in association with *Lithocarpus*, *Melastoma*, *Pinanga* and ferns.

Cordiglottis longipedicellata closely resembles *C. pulverulenta*, which is known only from Tembeling, Pahang, Malaysia. However, the former differs in having a non-prickly scape, a longer pedicel, in the colour and size of the sepals and petals, in the size, colour and non-powdery surface of the lip midlobe and in the longer column-foot. *Cordiglottis longipedicellata* also resembles *C. major*, but can be differentiated on the basis of a sheathed scape, longer

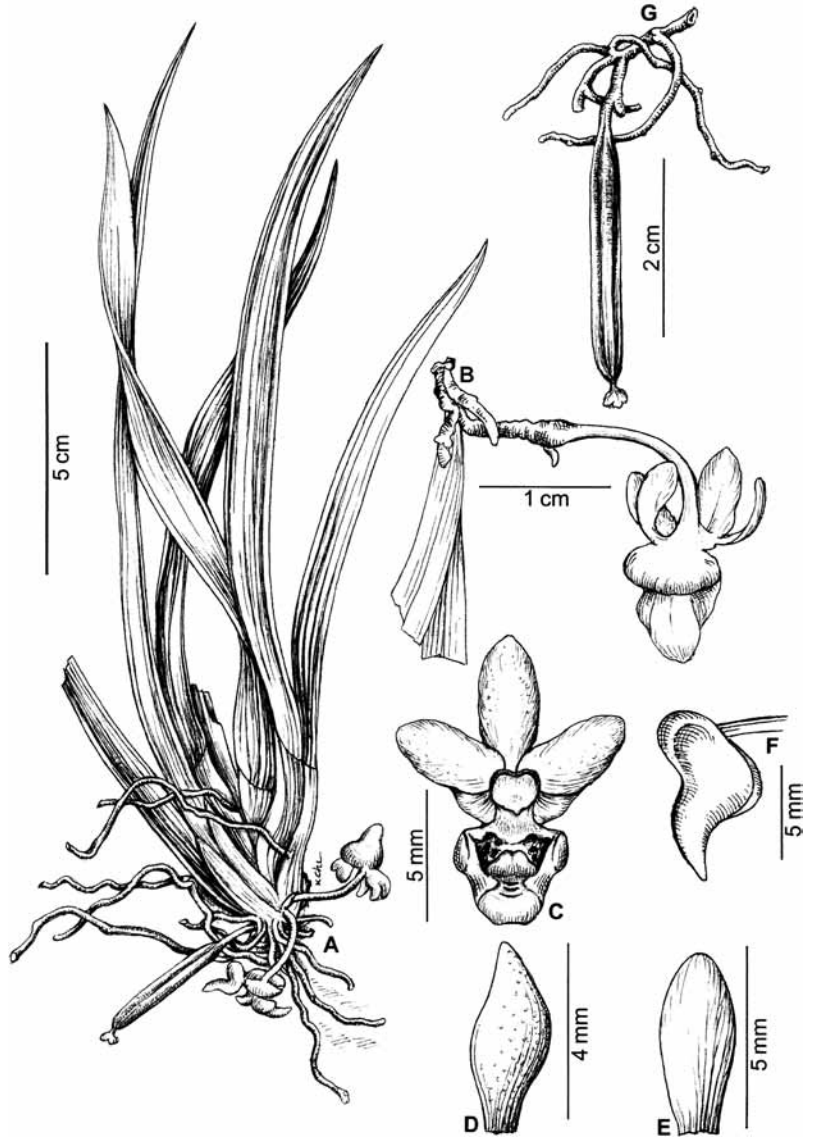


Fig. 3. *Cordiglottis longipedicellata* (drawn from the holotype by Mrs. Kim Chi). — **A:** Habit. — **B:** Posterior view of flower. — **C:** Anterior view of flower. — **D:** Lateral sepal. — **E:** Petal. — **F:** Side view of lip. — **G:** Fruit.

pedicel, unequal petals and sepals, and longer column foot in the latter; a saccate lip and a bent midlobe in the former. The clearest distinguishing characters between *C. longipedicellata*, *C. pulverulenta* and *C. major* are given in Table 1.

Key to genus *Cordiglottis*

- | | | | |
|---|----------------------|---|----------------------------|
| 1. Leaves laterally flattened | 2 | 3. Side lobes of lip longer than midlobe; sepals ca. 10 mm long | <i>C. major</i> |
| 1. Leaves terete | 5 | 4. Scape prickly; sepals and petals pale yellow; lip orange powdery | <i>C. pulverulenta</i> |
| 2. Scape very short, covered with sheaths | 3 | 4. Scape not prickly; sepals and petals white; lip not powdery | <i>C. longipedicellata</i> |
| 2. Scape with sheaths at base only | 4 | 5. Stem ca. 2.5 cm long; lip with small dots | 6 |
| 3. Side lobes of lip shorter than midlobe; sepals ca. 5 mm long | <i>C. breviscapa</i> | 5. Stem ca. 5 cm long; no dots on lip | 7 |
| | | 6. Leaves obtuse; sepals and petals with orange-chestnut brown with a yellow midline; lip yellow with brown dots | <i>C. westenikii</i> |
| | | 6. Leaves subacute; sepals orange, petals orange with pink spots; lip entire orange with red spots | <i>C. multicolor</i> |
| | | 7. Scape ca. 10 cm long; sepals and petals white or faintly flushed with mauve; lip with erect orange side lobes, midlobe papillose-hairy | <i>C. filiformis</i> |

Table 1. A comparison of the diagnostic characters of *Cordiglottis longipedicellata* with its supposedly closest allies.

Morphology	<i>C. longipedicellata</i>	<i>C. pulverulenta</i>	<i>C. major</i>
Scape	not covered with sheaths, ca. 5 mm long, not prickly	not covered with sheaths, ca. 1 cm long, prickly	covered with sheath, ca. 5 mm long, not prickly
Pedicele and ovary	1–1.2 cm long,	4–5 mm long,	4–5 mm long,
Sepals	white, lateral and dorsal sepals subequal	pale yellow, lateral and dorsal sepals unequal	cream-coloured, lateral and dorsal sepals unequal
Petals	white, larger than sepals	pale yellow, smaller than sepals	creamy, not equal to sepals
Lip	saccate, sigmoid, side lobes of lip longer than mid-lobe, white with purple dots on margin	saccate, sigmoid, side lobes of lip shorter than mid-lobe, cream-coloured	neither saccate nor sigmoid, side lobes of lip shorter than mid-lobe, white with purple stripes
Mid-lobe	bent downwards, disc yellow, not powdery	bent downwards, cream-coloured, covered by orange-yellow powdery substance	not bent downwards, white above with purple tinge at margin, covered by white powdery substance
Column-foot	2–2.2 mm long	ca. 1.5 mm long	ca. 6.5 mm long

7. Scape ca. 36 cm long; sepals and petals dark red; lip yellow with purple stripes on the side lobes and purple spots near base, mid-lobe glabrous *C. fulgens*

Cordiglottis longipedicellata has a very narrow distribution range in Vietnam, which falls under the reaches of the protected forest areas of HonBa Nature Reserve. During our frequent field visits to HonBa Nature Reserve in 2011 and 2012, we could locate only eight (five plus three, respectively) individuals. These populations were found at a distance of around 10 km from each other. The natural habitat of this species is well protected from anthropogenic activities, but the site within the nature reserve needs to be marked for long-term monitoring of the population in close coordination with the management authorities.

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References

- Garay, L. A. 1972: On the systematics of the Monopodial Orchids I. — *Botanical Museum Leaflets* 24: 149–212.
- Ho, P. H. 1993: *An illustrated flora of Vietnam*. — Mekong Printing, Montreal.
- Mabberley, D. J. 2008: *Mabberley's plant-book: a portable dictionary of plants, their classification and uses*. — Cambridge University Press, England.
- Seidenfaden, G. & Wood, J. J. 1992: *The orchids of Peninsular Malaysia and Singapore*. — Olsen & Olsen, Fredensborg.