A new species of *Lecanorchis* (Orchidaceae) from Thailand

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ABSTRACT: *Lecanorchis betongensis*, a new species from tropical rain forest in southern peninsular Thailand, is described and illustrated. The combination of semicircular column wings and a labellum with an odd number of major veins (but devoid of calli) places the new species in sect. *Lecanorchis*. However, the lack of any fusion between the labellum and the column readily distinguishes *L. betongensis* from all other species of the genus. The new species seems morphologically closest to *L. malaccensis* from Thailand, Malaysia and Sumatra.

KEY WORDS: Flora of Thailand, *Lecanorchis betongensis*, orchids, systematics, taxonomy, Vanilloideae.

INTRODUCTION

Due to its achlorophyllous condition, no cpDNA data are available for the mycoheterotrophic *Lecanorchis* Blume. However, phylogenetic studies based on morphological data (Freudenstein and Rasmussen, 1999) as well as sequence data from nuclear rDNA (Cameron and Chase, 2000) and mitochondrial DNA (Freudenstein and Chase, 2001) consistently indicate that this genus belongs to the Vanilloideae.

Morphologically, *Lecanorchis* is easily recognized from the presence of a cup-like calyculus just below the perianth, but the genus remains much understudied – mainly because it is only collected sporadically and because the fragile floral parts are often severely damaged when preserved by traditional pressing and drying.

According to the World Checklist of Selected Plant Families (http://apps.kew.org/wcsp/home.do; accessed on 1 September 2010), *Lecanorchis* accommodates ca. 18 species (probably an underestimate, as the leafless, dull-coloured plants constituting this genus are often overlooked in their natural environment). The generic distribution encompasses Japan (e.g. Hashimoto, 1990), Taiwan (e.g. Liu and Su, 1978), southern China (e.g. Chen et al., 2009), Vietnam (e.g. Averyanov, 2005), Bhutan and Sikkim (e.g. Pearce and Cribb, 2002), Thailand (see below), Peninsular Malaysia (e.g. Seidenfaden and Wood, 1992), Borneo (e.g. Wood and Cribb, 1994), Sumatra (e.g. Comber, 2001), Java (e.g. Comber, 1990), the Philippines (e.g. Valmayor, 1984) and New Guinea (e.g. Schlechter, 1914). The distribution map in Pridgeon et al. (2003: Fig. 221.2) additionally indicates occurrence in Bangladesh, Myanmar, Laos, Cambodia, Sulawesi and Maluku, but we have been unable to find any explicitly validated records from these regions.

Seidenfaden (1978) recognized two species, *L. malaccensis* Ridl. and *L. multiflora* J.J.Sm., in his treatment of Thai *Lecanorchis*, and recently Suddee et al. (2010) reported *L. javanica* Blume and *L. nigricans* Honda as new records for Thailand. During the preparation of the Vanilloideae account for Flora of Thailand (Suddee, submitted), another species of *Lecanorchis* was discovered. The specimens collected from Betong District, Yala Province in peninsular Thailand near the Malaysian border, match no previously described species. Therefore, we propose the new species *L. betongensis*.

TAXONOMIC TREATMENT

Lecanorchis betongensis Suddee & H. A. Pedersen, *sp. nov.* Figs. 1 & 2

Type: Thailand, peninsular floristic region, Yala Province, Betong District, Ban Chulaphon Phattana 10, 500-600 m, 5 May 2007, *Wai 1053* (holotype PSU!, spirit).

Species haec L. malaccensi affinis, sed labello columna haud unito et sepalis petalisque multo minoribus differt.

Rhizome J-shaped. Roots fleshy, numerous, 2-12 cm long, 3-4 mm in diameter. Flowering shoots 20-65 cm tall, erect, dark purple to black, 3-4 mm in diameter at base, branched. Leaves reduced to sheaths, glabrous, ovate, 3-5 mm long, acute, coriaceous, amplexicaul at base. Inflorescence glabrous; rachis 1.5-4 cm long, 3- to 15-flowered; bracts ovate, glabrous, 0.5-1.5 by 1-1.5

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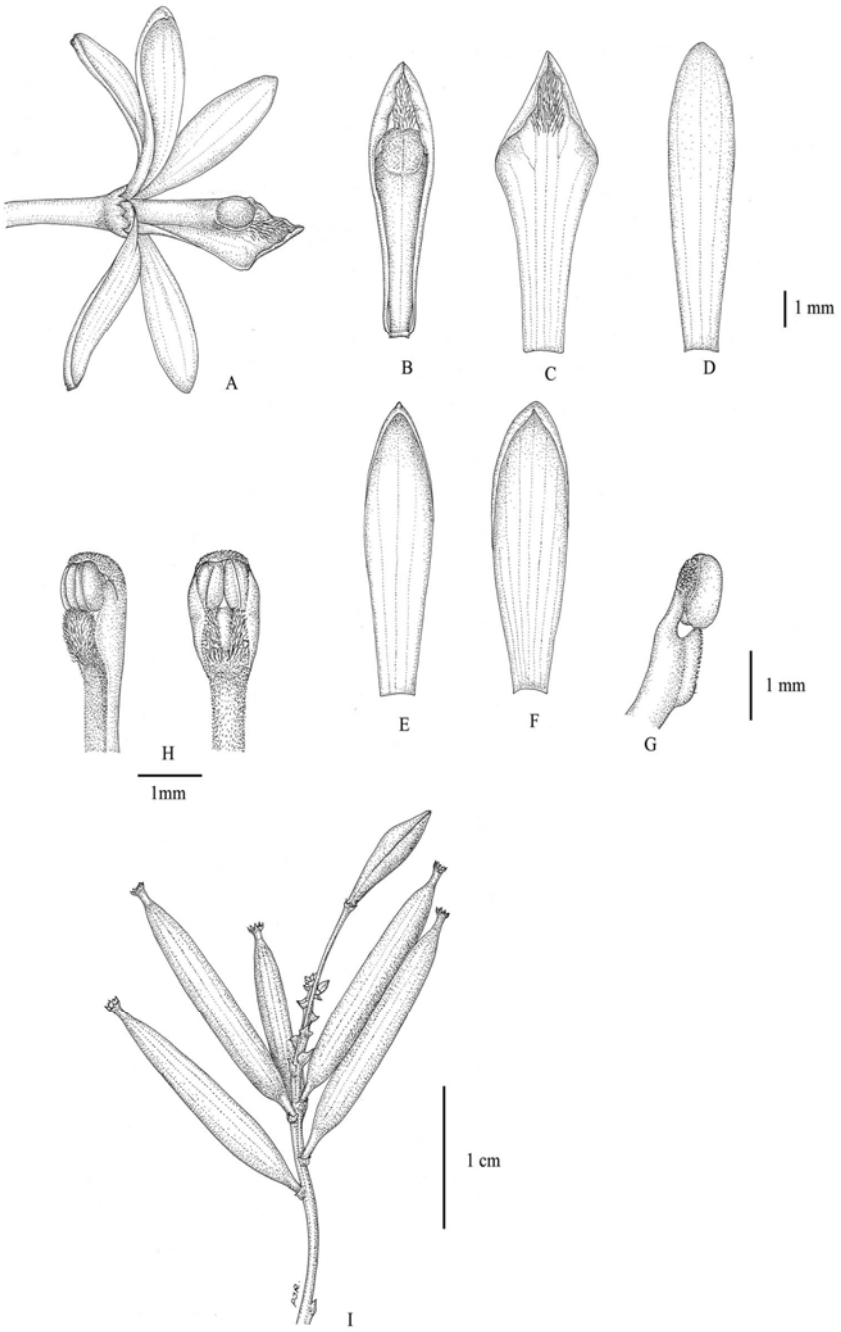


Fig. 1. *Lecanorchis betongensis* Suddee & H. A. Pedersen. A: Flower. B: Column and labellum. C: Labellum. D: Petal. E: Dorsal sepal. F: Lateral sepal. G–H: Column. I: Fruits and flower bud. A–I: *Wai 1053*. Drawn by Pajaree Inthachup.

mm, margin membranous. Flowers long-pedicelled, green to light brown. Sepals glabrous; dorsal sepal oblong-oblanceolate, 6-11 by 1.8-3 mm, 7-veined, apex hooded; lateral sepals oblong, 5.5-11 by 1.5-2.5 mm, 5-veined, apex hooded and apiculate. Petals glabrous, oblong, 5.5-10 by 2-3 mm, 3-veined. Labellum entire, rarely obscurely 3-lobed, 6-10 mm long along the mid-line, free from the column, 5-veined, major veins branched above; side lobes not exceeding the column, indistinct; midlobe oblong-oblanceolate, 2.5-3 mm wide, hooded, margin irregularly erose, with a small median hairy band, hairs multicellular. Column ventrally glabrous to finely puberulent, 4-8 mm long, winged at the top; wings semicircular with finely papillose edges; anther ca. 1 mm long, muricate at apex. *Ovary* (including pedicel) 8-20 mm long; calyculus

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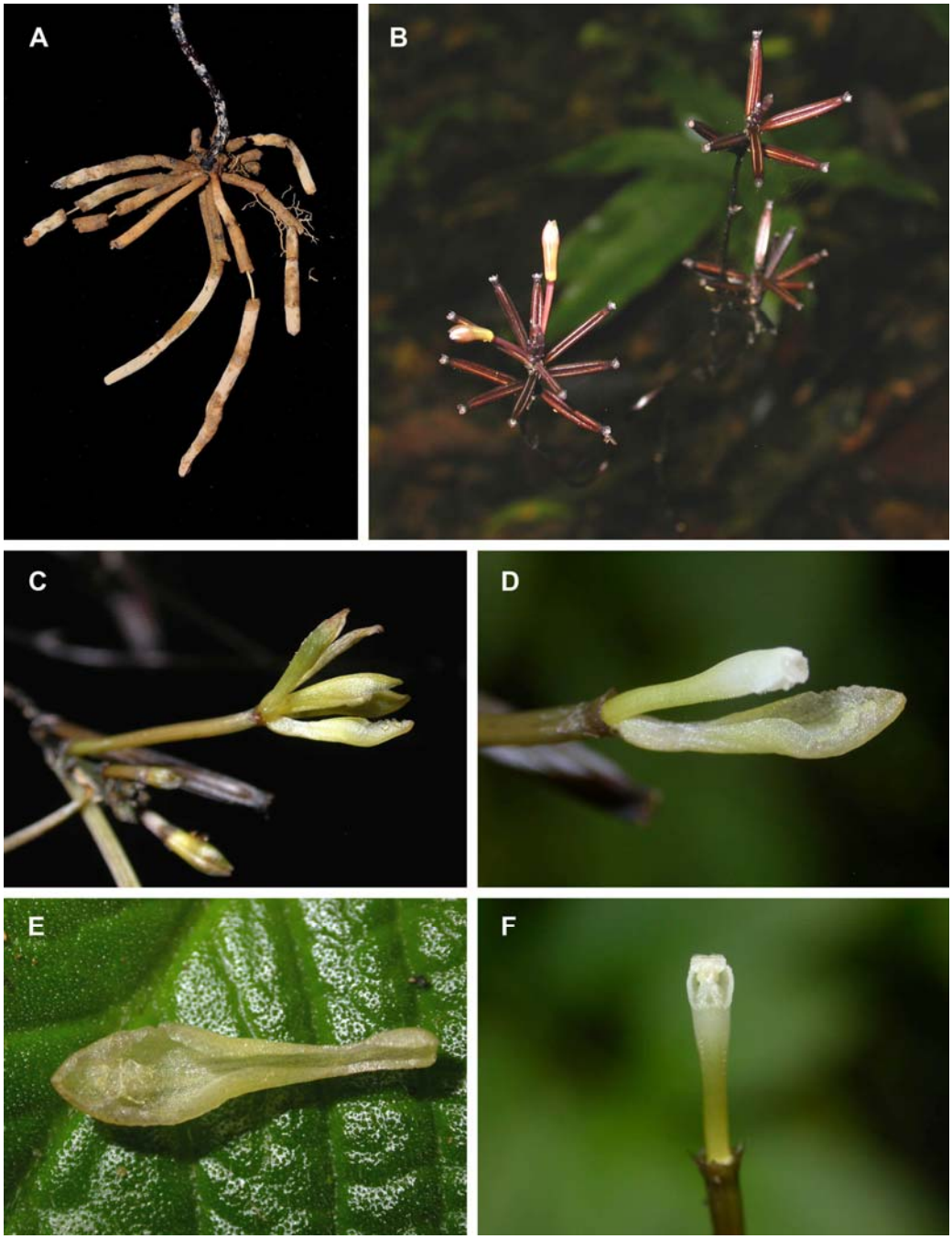


Fig. 2. *Lecanorchis betongensis* Suddee & H. A. Pedersen. A: Underground organs. B: Habit. C: Flower. D: Flower (sepals and petals removed). E: Labellum. F: Column. A–F: *Wai 2003*. Photographed by Thamarat Phutthai (A) and Jarearnsak Sae Wai (B–F).

glabrous, ca. 0.5 mm long, margin irregularly denticulate. *Capsule* black, fusiform, 2-2.3 cm long, 2-2.2 mm in diameter.

Specimens of *L. betongensis* examined (all from Thailand, Yala Province, Betong District): Ban Chulaphon Phattana 10, 500-600 m, 15 August 2004, *Wai 69* (PSU, spirit); 5 May 2007, *Wai 1053* (holotype PSU, spirit); 17 September 2010, *Wai 2003* (PSU, spirit); Nikhom Betong-Aiyoe Khwin, 700 m, 26 February 2001, *Suksathan 2903* (QBG).

Specimens of *L. malaccensis* examined for comparison: Peninsular Malaysia: Pahang, Tahan Woods, 1891, *Ridley s.n.* (SING, type). – Thailand: northeastern floristic region: Loei Province, Phu Kradueng, trail to Pha Lom Sak, 1220 m, 15 March 2008, *Suddee, Putthai, Kerdkaew, Witsawachaiwat, Hemrat, Somngam & Suwanachat 3584* (BKF, spirit); Phu Luang, Lon Tae, 1215 m, 11 November 2008, *Suddee, Pedersen, Watthana, Putthai, Hemrat & Suwanachat 3988* (BKF, spirit). Peninsular floristic region:

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Narathiwat Province, Sukhirin, 29 March 2000, *Puudjaa & Cholkulchana 737* (BKF, spirit); Surat Thani Province, Ko Pha-ngan, 2 June 1927, *Put 761* (C, spirit).

Etymology: The new species is named after the Betong District.

Distribution: *Lecanorchis betongensis* is apparently endemic to Thailand, but it might be expected also to occur across the border in Peninsular Malaysia.

Conservation: Known only from 4 collections from the type locality and a nearby locality within the same subdistrict. The area is in Bang Lang National Park; it is well protected, but its flora is still poorly known.

Ecology: Mycoheterotrophic, apparently restricted to tropical rain forest at 500-700 m alt. Flowering: February-September.

Notes: The new species seems morphologically closest to *L. malaccensis* from Thailand, Malaysia and Sumatra. However, it differs from the latter species in having larger sepals and petals, and in its labellum being completely free from the column. Indeed, the lack of any fusion between the labellum and the column readily distinguishes *L. betongensis* from all other species of the genus. The combination of semicircular column wings and a labellum with an odd number of major veins (but devoid of calli) places the new species in sect. *Lecanorchis* as morphologically defined by Hashimoto (1990). However, the entire or only obscurely 3-lobed condition of the labellum in *L. betongensis* is not typical of sect. *Lecanorchis*.

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泰國的新種皿蘭屬(蘭科)植物

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摘要：本文敘述並描繪泰國南部半島熱帶雨林的新種 *Lecanorchis betongensis*。該新種具有半圓形的蕊柱側翼，且唇瓣具奇數主脈（但缺乏肉突），故應屬於 *Lecanorchis* 節。然而，其唇瓣與蕊柱完全分離而使它與同屬其他物種明顯不同。這個新種形態上與泰國、馬來西亞、蘇門答臘的 *L. malaccensis* 相近。

關鍵詞：泰國植物誌、*Lecanorchis betongensis*、蘭花、系統學、分類學、香茭蘭亞科。

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