Notes on the Orchid Flora of Thailand (II)

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ABSTRACT: Three orchid species are newly recorded for the flora of Thailand. The discovery of *Macodes petola* in the southern part of Peninsular Thailand, adjacent to known occurrences across the Malaysian border, was expected. On the other hand, the find of *Cheirostylis octodactyla* in Thailand considerably extended the known range of this species to the west, as it was previously known only from the northern part of the Philippines, Taiwan and (through a single collection) from northern Vietnam. The recent discovery of populations of *Zeuxine bidupensis* in Thailand suggests that this species, hitherto considered endemic to Vietnam, does not only have morphological, but also geographic affintities to the little known *Z. pantlingii* from West Bengal.

KEY WORDS: *Cheirostylis octodactyla*, *Macodes petola*, Orchidaceae, *Zeuxine bidupensis.*

INTRODUCTION

Ongoing studies in connection with the preparation of the orchid account for Flora of Thailand, regularly result in new taxonomic and floristic findings, some of which are being reported in this series of papers. The first paper in the series was published recently (Pedersen and Ormerod, 2009); its introduction includes general information on the Flora of Thailand project and the forthcoming orchid volume.

In the present paper, *Macodes petola* (Blume) Lindl., *Cheirostylis octodactyla* Ames and *Zeuxine bidupensis* Aver. are newly recorded for the flora of Thailand. As elaborated below, especially the discoveries of the latter two species in Thailand are of considerable interest from taxonomic and geographic points of view. To faciliate future taxonomic studies of the complexes involving *Cheirostylis octodactyla* and *Zeuxine bidupensis*, respectively, illustrations and morphological descriptions are provided, based exclusively on material from the geographically isolated populations of these two species in Thailand.

TAXONOMIC TREATMENTS

Macodes petola (Blume) Lindl., Gen. Sp. Orch. Pl.: 497. 1840.

Neottia petola Blume, Bijdr.: 407. 1825.

Thai material examined: Peninsular floristic region: Nakhon Si Thammarat: sine loco, October 2008 (*sine coll./cult. Taweepok s.n.* QBG!).

Notes: *M. petola* was originally described from Java, and it has subsequently been recognized from Peninsular Malaysia, Sumatra, Borneo and the Philippines (e.g. Valmayor, 1984; Seidenfaden and Wood, 1992; Wood and Cribb, 1994; Beaman et al., 2001; Comber, 2001). It is not surprising that this species also occurs in southernmost Thailand, as it has been found north to Pinang in Peninsular Malaysia (Seidenfaden and Wood, 1992). According to local orchid enthusiasts, *M. petola* in Peninsular Thailand occurs in evergreen forest on mountains where it grows terrestrially on stream banks and on tree fern stems at medium altitude. The species has also been found at Sai Kao waterfall in Pattani (K. Taweepok, pers. comm.).

Cheirostylis octodactyla Ames, Philipp. J. Sci., C. Botany II: 314. 1907. Fig. 1

Cheirostylis inabai Hayata, Icon. Pl. Formos. IV: 108, Fig. 56. 1914.
Cheirostylis oligantha Masam. & Fukuy., Trans. Nat. Hist. Soc. Taiwan 30: 241. 1940.

Terrestrial, rhizomatous herbs; the creeping moniliform rhizome devoid of roots, but provided with internodal rhizoids. *Flowering shoots* terminal, 3.5–9 cm tall, 1.5–3.5 mm in diameter in their middle part. *Foliage leaves* 4–8, scattered on the stem, dull green above, paler underneath, petiolate, sheathing at base; petiole channelled, 0.5–1.6 cm long (including sheath); lamina ovate to elliptic, acute to acuminate, often minutely mucronate, 0.5–2.5 × 0.4–1.4 cm, decreasing in size towards the base of the shoot (lamina of longest leaf 1.2–2.5 cm long); stem with 2–3 additional bract-like leaves below the inflorescence. *Inflorescence* glabrous; rachis up to 0.5 cm long, 1- to 2-flowered; bracts (sub)erect, lanceolate, acute, 1-veined, glabrous, 7–11 ×

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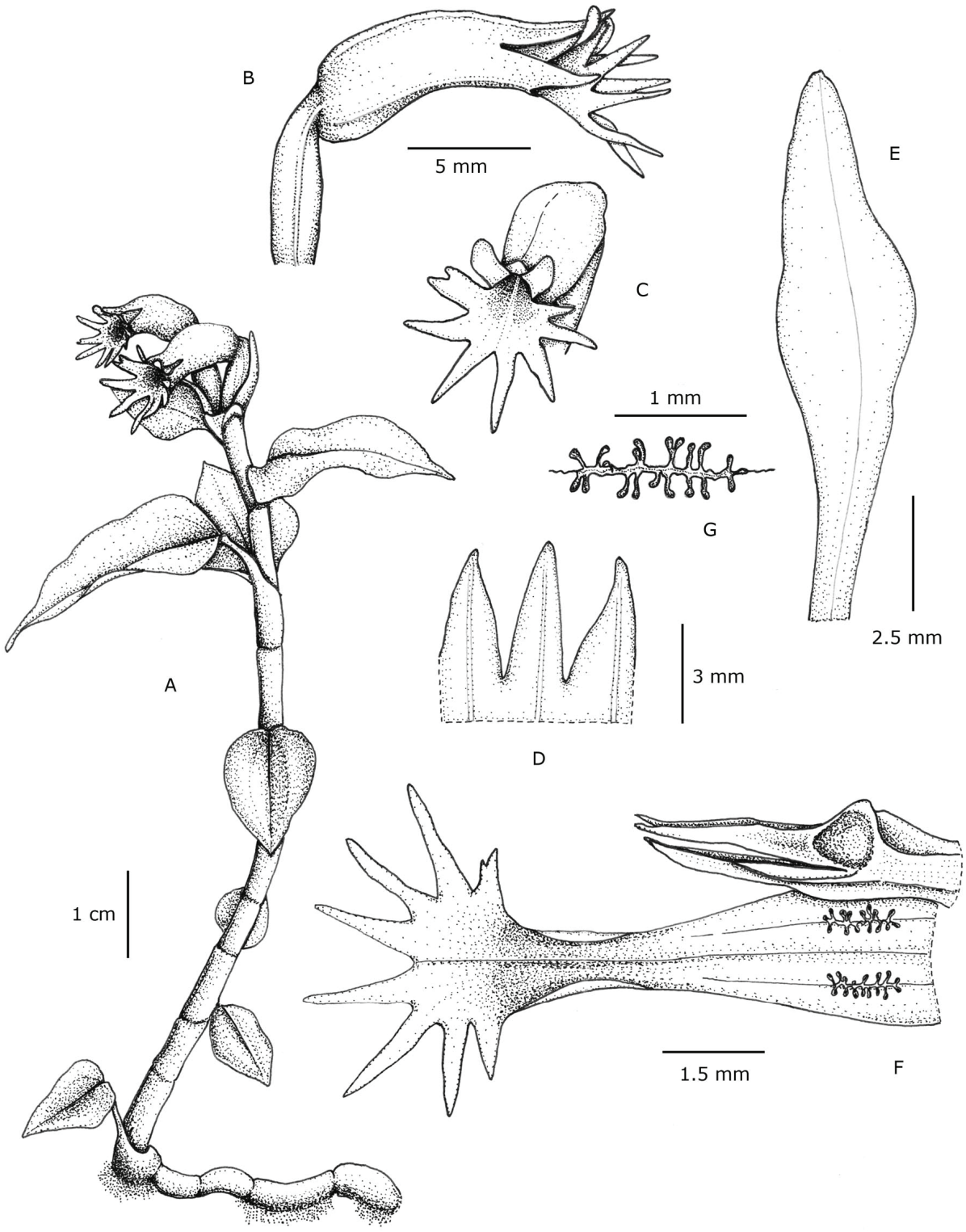


Fig. 1. ***Cheirostylis octodactyla*****. A: Habit. B: Flower (side view). C: Flower (front view). D: Distal part of synsepal (slit ventrally and spread out). E: Petal. F: Labellum and column (hypochile detached at base and spread out). G: Appendages from one side of the labellum. A–G:** ***Suksathan 4623*****. Drawing by Piyakaset Suksathan.**

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2–2.7 mm. *Flowers* subsessile, resupinate, white. *Sepals* connate in most of their length to form a tubular glabrous c. 11.5 mm long synsepal with 3 subacute distal lobes. *Petals* adnate to the synsepal in their whole length (their recurved apices protruding from its lateral sinuses), obliquely (ob)lanceolate, 1-veined, glabrous, c. 12.2 × c. 3.1 mm. *Labellum* c. 8.2 mm long along the midline, differentiated in hypochile, mesochile and epichile; hypochile concave, inside with two longitudinal rows of 15–20 papilla-like appendages; mesochile devoid of lateral flanges; epichile transversely elliptic, coarsely 7- to 8-dentate, c. 3.4 × c. 5.2 mm (to apices of teeth). *Column* straight (i.e. not twisted), irregularly subterete, c. 5.2 mm long; stylids 2, linear, subequal to the rostellum; rostellum linear-triangular, bifid; viscidium 1, naked; anther versatile, acuminate in front, c. 1 mm long; pollinia 2, basitonous. *Ovary* glabrous, 8–10 mm long. *Fruit* not seen.

Thai material examined: Northern floristic region: Phitsanulok: Phu Soi Dao, 17 September 2008 (*Suksathan 4623* QBG!).

Notes: This species has its main distribution in Taiwan (e.g. Hayata, 1914; Lin, 1977; Liu and Su, 1978) and the northern parts of the Philippines (e.g. Ames, 1907; Valmayor, 1984). In mainland Asia, it was previously only known through a single collection from northern Vietnam (Averyanov 2008), so the recent find in northern Thailand was surprising and considerably extended the known range of *C. octodactyla* to the west. However, *C. pingbianensis* K. Y. Lang from Yunnan (Lang, 1996) seems doubtfully distinct from this species, and its range of variation should be studied further. The Thai plants of *C. octodactyla* were found growing in humus-rich soil in hill evergreen forest at 1800 m alt.

Zeuxine bidupensis Aver., Rheedea 16: 12, Figs 7g–h, 9. 2006. Figs. 2 & 3

Terrestrial, rhizomatous herbs; the creeping stem-like rhizome rooting from its nodes. *Flowering shoots* terminal, erect from a decumbent base, 18–33 cm tall (sometimes branched at base); stem diameter 3–5 mm at base, 1–2 mm just below the rachis. *Foliage leaves* 3–6 (on the main shoot), scattered to crowded on the lower to middle part of the stem, petiolate (lower leaves) to subsessile (upper leaves), blackish green to reddish green above, dark green to reddish grey underneath; petiole channelled, sheathing at base, up to 1.7 cm long (including sheath); lamina lanceolate to narrowly ovate, slightly oblique, acute to obtuse, minutely mucronate, (1.3–)2–6.7 × (0.7–)1–3 cm. *Inflorescence* spicate, pubescent, lax; peduncle provided with 2–3, 0.6–1.9 cm long bract-like leaves; rachis 3.7–8 cm long, 5- to 14-flowered; floral bracts (sub)erect, ovate-lanceolate, acuminate, 1-veined (to obscurely 3-veined), ciliate (otherwise glabrous), 5.4–10 × 2.4–4.4 mm. *Flowers* sessile, more or less resupinate, barely opening (though lateral sepals sometimes spreading), mainly dull reddish with white petals, cream to yellow labellum and olive-brown ovary; perianth perpendicular to the ovary. *Sepals* free, 3-veined, glabrous; dorsal sepal porrect over the column, strongly boat-shaped, ovate, rounded, 5–6 × 2.8–4.2 mm; lateral sepals porrect to spreading, shallowly boat-shaped, linear-lanceolate, slightly oblique, obtuse, 4.5–6 × 1.3–1.6 mm. *Petals* adnate to the dorsal sepal, obliquely to falcately oblanceolate, rounded, 2-veined, glabrous, 4.6–5.4 × 1.4–1.5 mm. *Labellum* adnate to the proximal half of the column, straight (i.e., not twisted), 3.9–4.2 mm long along the midline, distinctly differentiated in hypochile and epichile; hypochile slightly saccate, 1.9–2 mm wide, inside with 1 scale-like appendage in either side, distally with infolded, papillose-pubescent and somewhat swollen margins; epichile subquadrate to transversely subrectangular, half as wide to approximately as wide as the hypochile. *Column* straight (i.e., not twisted), irregularly subterete, c. 3.4 mm long (to apex of rostellum), provided with two small wings on the front; wings on the front slightly incurved, obliquely triangular, much shorter than the rostellum; rostellum linear, bifid (lobules strongly keeled at apex), c. 1.7 mm long, distinctly exceeding the anther, producing a long linear tegula; viscidium 1, lanceolate, naked; anther versatile, acuminate and strongly keeled in front, 2.4–2.7 mm long, 0.9–1.2 mm wide; pollinia 2, basitonous. *Ovary* glabrous, 8–11.7 mm long. *Capsule* suberect, sessile, obliquely oblongoid-fusiform, 12–14 mm long (excl. floral remnants), 3.5–4 mm in diameter, glabrous.

Thai material examined: Northern floristic region: Phitsanulok: Phu Soi Dao, 17 September 2008 (*Suksathan 4617* QBG!). – Northeastern floristic region: Loei: Phu Luang Wildlife Sanctuary, Kok Nok Kraba ranger substation, trail to Kok Phrom Chan, 7 November 2008 (*Suddee et al.* 3952 BKF!); Phu Luang Wildlife Sanctuary, Pah Yueng, 8 November 2008 (*Suddee et al. 3958* BKF!).

Notes: This species is morphologically very close to *Z. pantlingii* Av. Bhattacharjee & H. J. Chowdhery from West Bengal (Bhattacharjee and Chowdhery, 2006), differing mainly in its cream to yellow (not white) labellum and the thick and scale-like (not slender and cornute to subulate) appendages in its hypochile. Further collections of these apparently rare plants may demonstrate continuous variation in the characters indicated (in which case the two taxa should be merged). Future attempts at resolving this complex systematically should also include *Z. agyokuana* Fukuy. from Japan and Taiwan, which appears very similar to *Z. pantlingii*.

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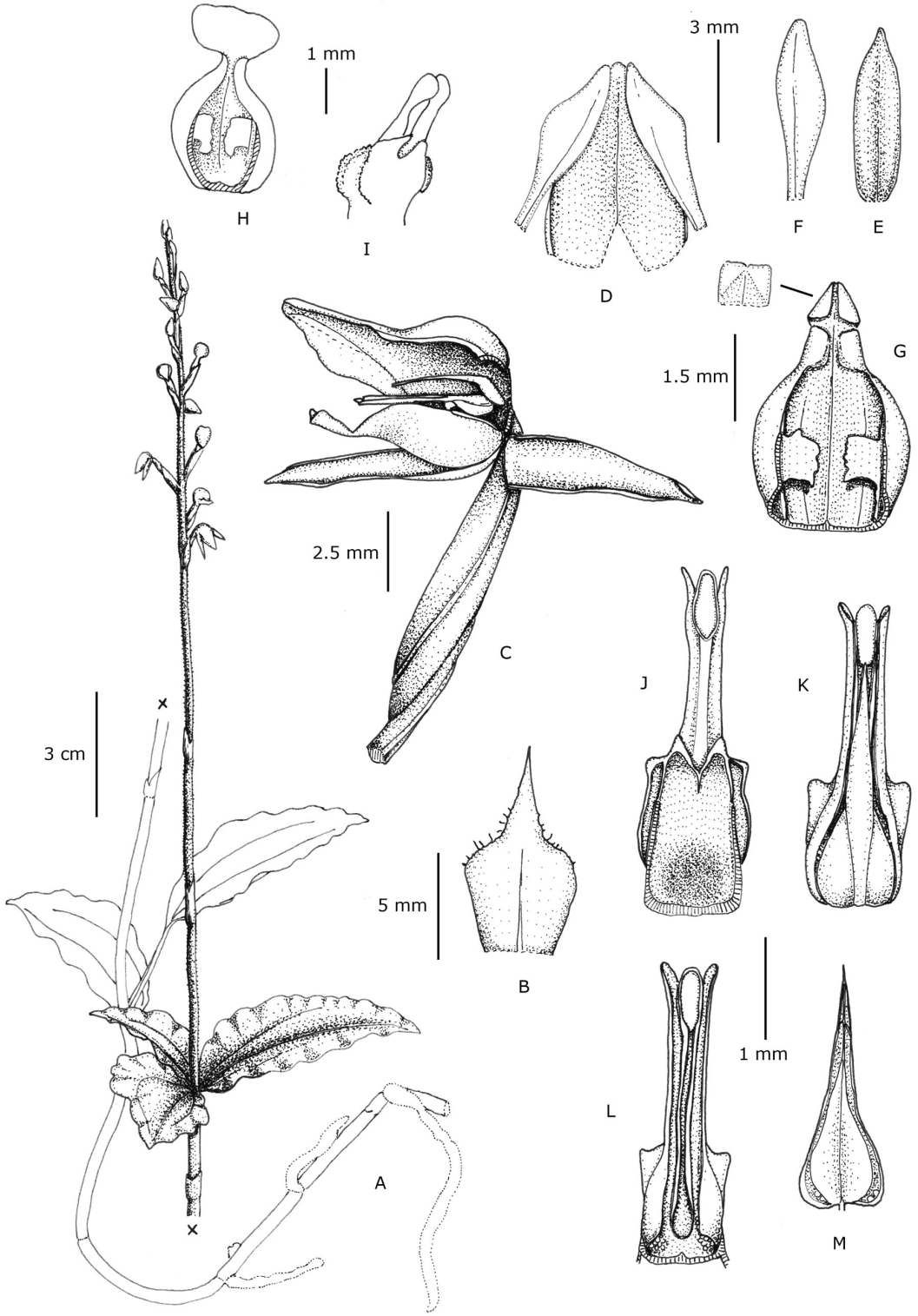


Fig. 2. ***Zeuxine bidupensis*****. A: Habit. B: Bract. C: Flower. D: Petals and dorsal sepal. E: Lateral sepal. F: Petal. G–H: Labellum. I: Column (slanting lateral view). J: Column (lower view). K: Column (upper view). L: Column (upper view, anther removed). M: Anther. A–G, J–M:** ***Suksathan 4617*****; H–I:** ***Suddee et al. 3952*****. Drawing by Piyakaset Suksathan.**

臺灣大學學術期刊資料庫



Fig. 3. Flowers of *Zeuxine bidupensis*, photographed in Phu Luang Wildlife Sanctuary, NE Thailand on 7th November 2008. Photo by Henrik Æ. Pedersen.

According to the sparse material available, *Z. bidupensis* in Thailand grows in hill evergreen forest and lower montane scrub forest at 1,425–2,100 m alt.

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臺灣大學學術期刊資料庫

泰國蘭科植物誌 (二)

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摘要：泰國植物誌增加三種新紀錄的蘭花。其中 *Macodes petola* 發現於泰國南部，與已知有此分佈的馬來西亞邊界緊鄰。而 *Cheirostylis octodactyla* 的發現使其分佈範圍向西延伸，它之前知道分佈於菲律賓北部，臺灣與越南北部。最近發現之 *Zeuxine bidupensis*，之前以為是越南特有，不僅在形態上也在地理上近似於 West Bengal 之 *Z. pantlingii*。

關鍵詞：*Cheirostylis octodactyla*、*Macodes petola*、蘭科、*Zeuxine bidupensis*。

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