



Zingiber latibracteum, a new species of *Zingiber* (Zingiberaceae) from Northern Vietnam

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ABSTRACT: *Zingiber latibracteum* X.D.Ma, J.M.Lu & J.Y.Shen, currently assigned to *Zingiber* sect. *Dymczewiczia*, is newly described from Ha Giang Province, Northern Vietnam. It resembles *Z. calcicola* Y.H.Tan & H.B.Ding, *Z. mellis* Škorničk., H.Đ.Trần & Šída f. and *Z. plicatum* Škorničk. & Q.B.Nguyễn in having terminal inflorescences but is clearly distinguished by its glabrous ligules with rounded apex, shorter petiole, broadly elliptic bracts and smaller lateral staminodes. A comparison table of related species is provided.

KEY WORDS: distribution, *Dymczewiczia*, habitat, morphology, Vietnam, *Zingiber calcicola*, *Zingiber mellis*, *Zingiber plicatum*.

INTRODUCTION

Zingiber Mill. is one of the largest genera in the family Zingiberaceae Martinov, comprising over 200 species native to tropical and subtropical Asia (Wu and Larsen, 2000; Lý *et al.*, 2021; Ding *et al.*, 2021, 2023; Nguyen-Phi *et al.*, 2025). Based on inflorescence position, this genus was traditionally classified into four sections: *Z.* sect. *Zingiber* exhibits radical inflorescences with long and erect peduncles, *Z.* sect. *Dymczewiczia* Horaninow (1862) exhibits terminal inflorescences on leafy shoots, *Z.* sect. *Pleuranthesis* Bentham & Hooker (1883) exhibits inflorescences appearing laterally from the leaf sheaths and *Z.* sect. *Cryptanthium* Horaninow (1862) exhibits radical inflorescences with procumbent peduncles (Leong-Škorničková *et al.*, 2015; Ding *et al.*, 2023). Pending comprehensive studies with expanded sampling and multiple DNA markers, this work upholds the traditional sectional treatment. In Vietnam, 41 species of *Zingiber* have been documented, with four of them classified under *Z.* sect. *Dymczewiczia* (Leong-Škorničková *et al.*, 2015; Nguyễn and Lin, 2024; Nguyen-Phi *et al.*, 2025).

Zingiber latibracteum was initially collected from Vi Xuyen County, Ha Giang Province, Northern Vietnam, near A Boong Waterfall in November 2001, then the living plants were cultivated in the nursery of Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences. In October 2021, during an investigation of Zingiberaceae plant resources at Xishuangbanna Tropical Botanical Garden, we discovered this species was an undescribed species of *Zingiber*. Morphologically, it exhibits similarities to *Z. calcicola*, *Z. mellis*, and *Z. plicatum*, but possesses distinct characteristics that warrant its recognition as a new species, which we formally describe herein.

TAXONOMIC TREATMENT

Zingiber latibracteum X.D.Ma, J.M.Lu & J.Y.Shen, *sp. nov.* **Fig. 1**

Type: VIETNAM, Vi Xuyen County, Ha Giang Province, near A Boong Waterfall, the voucher prepared from a cultivated plant at Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, 18 October 2021, Xing-Da Ma & Jian-Yong Shen 0591 (holotype: HITBC; isotype: KUN).

Diagnosis: *Zingiber latibracteum* is readily distinguishable from *Z. calcicola*, *Z. mellis* and *Z. plicatum* by its glabrous ligules, rounded ligule apex, laminae without prominent plication, and shorter lateral staminodes (Table 1).

Description: Perennial, rhizomatous herbs, 45–75 cm tall. Rhizome creeping, internodes ca. 4 cm long, ca. 3.5 cm in diameter, externally light brown. Roots fleshy, slender, 8–21 cm long, 4–5 mm in diameter, and bearing many fibrous roots. Leafy shoot slender, terete, erect or slightly slanting, base slightly expanded, with 8–14 leaves, basal 1/3–1/2 leafless; bladeless sheaths 2–4, green or light yellowish-green, glabrous. Leaves subsessile or shortly petiolate; leaf sheaths green, glabrous or sparsely pilose; ligule 3–6 mm long, ovate, translucent, pale green, glabrous; petiole 1–2 mm long, glabrous; lamina 12–21 × 5–7 cm, elliptic, glabrous, adaxially green, abaxially light green, base broadly cuneate to rounded, apex caudate, margin slightly undulate. Inflorescence terminal on leafy shoots, subsessile; spike 8–14 × 1.2–1.5 cm, cylindrical to fusiform, consisting of 9–14 bracts; bracts 1.9–2.7 × 1.8–2.5 cm, broadly elliptic, light yellowish-green to green, apex broadly acute to obtuse, glabrous; enclosing a cyme with 2 flowers per bract; bracteoles 0.8–1.2 × 0.4–0.6 cm, narrowly ovate to lanceolate, translucent, light yellowish-green or light creamy yellow, glabrous, apex short-

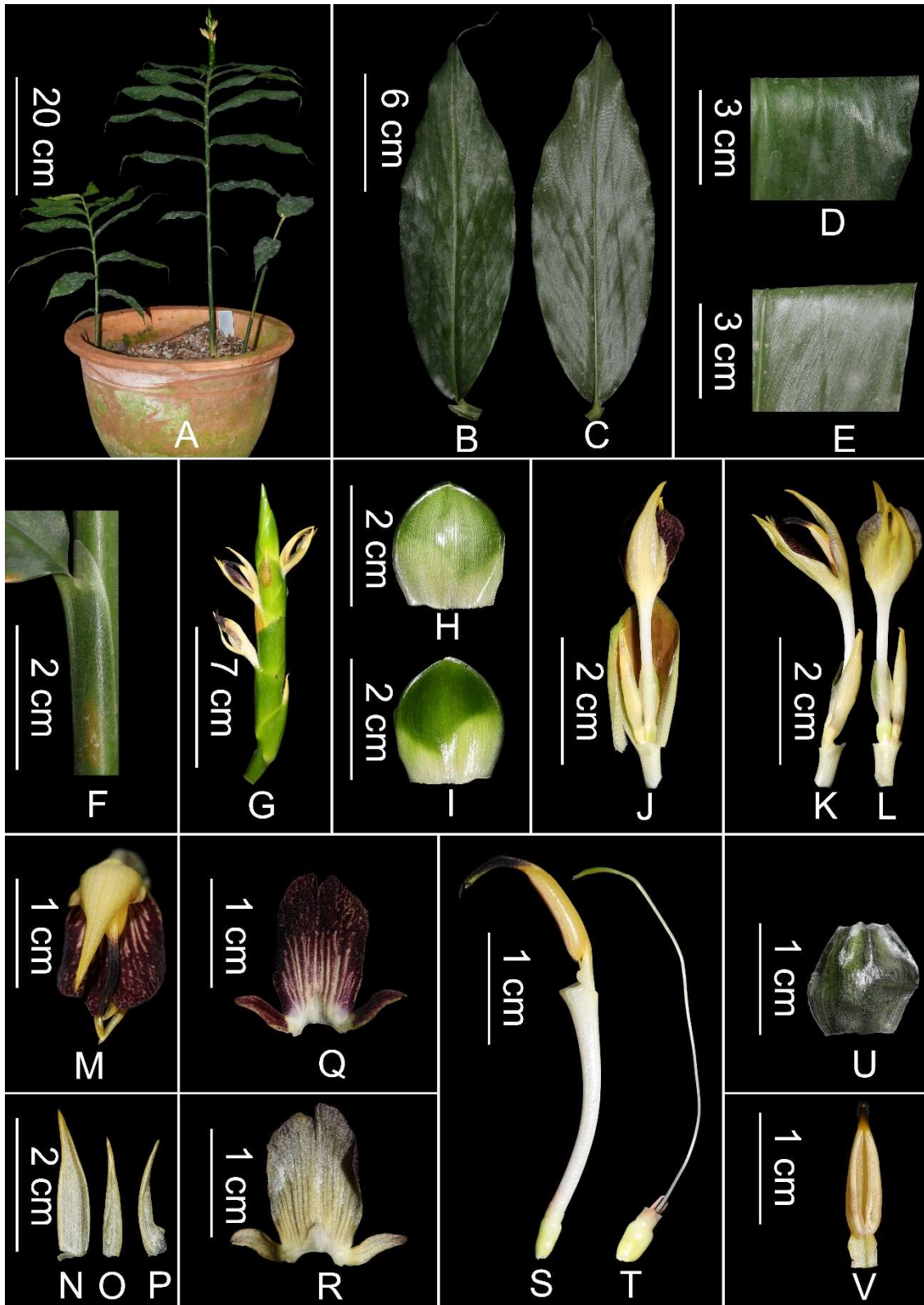


Fig. 1. *Zingiber latibracteum*. **A.** Plants. **B.** Leaf, adaxial view. **C.** Leaf, abaxial view. **D–E.** Adaxial and abaxial leaf surfaces. **F.** Leafy shoot. **G.** Inflorescence. **H.** Bract, adaxial view. **I.** Bract, abaxial view. **J.** Flowers and bract, side view. **K–L.** Flowers, side view. **M.** Flower, front view. **N.** Dorsal corolla lobe, adaxial view. **O–P.** Lateral corolla lobes, adaxial view. **Q.** Labellum and lateral staminodes, adaxial view. **R.** Labellum and lateral staminodes, abaxial view. **S.** Ovary, floral tube, stamen and stigma, side view. **T.** Ovary, style and epigynous glands, side view. **U.** Longitudinal section of the calyx tube. **V.** Stamen, front view.

Table 1. Comparison of *Zingiber latibracteum*, *Z. calcicola*¹, *Z. mellis*², and *Z. plicatum*².

Characters	<i>Z. latibracteum</i>	<i>Z. calcicola</i>	<i>Z. mellis</i>	<i>Z. plicatum</i>
Ligule	apex rounded, glabrous	apex truncate or emarginate, pubescent along the margin	shallowly bilobed, densely pilose	shallowly bilobed, puberulent
Petiole length	1–2 mm long	3–15 mm long	ca. 5 mm long	3–7 mm long
Lamina	no prominent plication	prominent plication	no prominent plication	prominent plication
Bract shape	broadly elliptic	elliptic	obovate	elliptic to weakly obovate, with broadly acute to rounded apex
Flower length	4.2–4.8 cm	6–6.5 cm	5–6 cm	ca. 5.3 cm long
Labellum	ovate, 1.4–1.6 × 0.9–1.1 cm	oblong, 1.9–2.3 × 0.8–1 cm	broadly obovate, ca. 3 × 2.2 cm	obovate, ca. 1.9 × 1.2 cm
Lateral staminode	5–6 × 1.5–2 mm, adaxially dark maroon with light creamy yellow dots, abaxially light creamy yellow	13–16 × 2–3 mm, adaxially dark maroon with yellow dots, abaxially yellow	15–17 × 6–7 mm, yellow	ca. 12 × 4 mm, oblong, connate to labellum by basal 1 mm, peach or pink-purple at base, fading pale yellow to cream white towards apex, outer sides and apices reflexed

¹ From Ding *et al.* (2021). ² From Leong-Škorničková *et al.* (2015).

acuminate to obtuse, strongly revolute along the midrib. Flowers 4.2–4.8 cm long, strongly exerted beyond the bract; calyx tubular, slightly dilated in the middle, 0.9–1.2 cm long, with a diameter of about 3 mm at the middle, translucent, light yellowish-green or light creamy yellow, glabrous, with two inconspicuous teeth at the apex and a unilateral incision, ca. 6 mm in depth; floral tube 2.1–2.4 cm long, slightly curved, gradually widening towards the apex, creamy white, pale creamy yellow at the apex, glabrous; dorsal corolla lobe lanceolate, 2.1–2.3 × 0.4–0.6 cm, semi-translucent, light creamy yellow, attenuate and strongly revolute along the midrib at the apex, glabrous; lateral corolla lobes narrowly lanceolate, 1.7–1.9 × 0.3–0.4 cm, semi-translucent, light creamy yellow, attenuate and strongly revolute along the midrib at the apex, glabrous; labellum ovate, 1.4–1.6 × 0.9–1.1 cm, glabrous, adaxially dark maroon with light creamy yellow stripes and dots, abaxially semi-translucent, light creamy yellow, margins slightly deflexed, apex emarginate, ca. 1.5 mm in depth; lateral staminodes oblong, 5–6 × 1.5–2 mm, connate to labellum by basal 1 mm, glabrous, adaxially dark maroon with light creamy yellow dots, abaxially semi-translucent, light creamy yellow, apex obtuse. Stamen 1.8–2 cm long with anther crest; filament ca. 2 × 1.7 mm, semi-translucent, light creamy yellow, glabrous; anther 9–10 × 3–4 mm (excluding anther crest), narrowly ovate, connective tissue light creamy yellow, glabrous; anther crest beak-shaped, 7–8 mm long, wrapping around the stigma, dark maroon-black, glabrous. Style 1.5–1.7 cm long, filiform, semi-translucent, creamy white, light green towards the apex, glabrous; stigma ca. 2 mm long, slightly thicker than style, narrowly infundibuliform, semi-translucent, light green, ostiole front-facing, glabrous. Ovary oblong, ca. 4 × 2 mm, greenish yellow, glabrous, trilocular. Epigynous glands two, linear, ca. 3 mm long, pale cream-yellow with a hint of pale purplish-red, glabrous. Fruit and seeds not seen.

Phenology: Flowers were observed in October.

Etymology: The name '*latibracteum*' from Latin *latus* ("wide") and *bractea* ("bract"), indicating wide bracts in the species.

Distribution and habitat: According to the introduction record, this species was originally collected near A Boong Waterfall in Vi Xuyen County, Ha Giang Province, Northern Vietnam, where it inhabited a limestone forest.

Note: *Zingiber latibracteum* shares morphological similarities with *Z. calcicola*, *Z. mellis* and *Z. plicatum* in elliptic laminae and erect terminal inflorescences. However, it can be easily distinguished from *Z. calcicola* in having glabrous ligules and rounded ligule apex (vs. pubescent along the margin, apex truncate or emarginate), shorter petiole (1–2 mm vs. 3–15 mm), lamina without prominent plication (vs. prominent plication), shorter lateral staminodes (5–6 mm vs. 13–16 mm). It can be distinguished from *Z. mellis* by having glabrous ligules with rounded apex (vs. densely pilose, shallowly bilobed), shorter petiole (1–2 mm vs. 5 mm), broadly elliptic bracts (vs. obovate), ovate and smaller labellum (1.4–1.6 × 0.9–1.1 cm vs. broadly obovate, ca. 3 × 2.2 cm), smaller lateral staminodes with adaxially dark maroon and abaxially creamy yellow surfaces (5–6 × 1.5–2 mm vs. 15–17 × 6–7 mm, yellow). Compared to *Z. plicatum*, it also differs in having glabrous ligules and rounded ligule apex (vs. shallowly bilobed, puberulent), shorter petiole (1–2 mm vs. 3–7 mm), lamina without prominent plication (vs. prominent plication), shorter lateral staminodes (5–6 mm vs. ca. 12 mm).

IUCN preliminary assessment: So far known only from the type locality in Northern Vietnam. Only one population has been recorded by us, but the species is expected to be found in nearby limestone forests as suitable habitat still seems to exist. Until further data are available, according to the IUCN Red List Categories and Criteria (version 16, IUCN Standards and Petitions



Committee, 2024), this species should be treated as Data Deficient (DD).

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