

A New Species of *Zingiber* (Zingiberaceae) from Mt. Victoria, Western Myanmar

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Abstract A new species, *Zingiber matupiense* M.M.Aung & Nob.Tanaka (Zingiberaceae) is described from the north of Mt. Victoria, western Myanmar. This species is assignable to *Zingiber* Mill. section *Cryptanthium* Horan., and is similar to the *Z. cernuum* Dalz., and *Z. squarrosum* Roxb. However, it is markedly distinguished from these species by its erect leafy stem, yellowish white, recurved bracts, longer floral tubes, and bright yellow lateral staminodes.

Key words: Myanmar, new species, sect. *Cryptanthium*, *Zingiber*, Zingiberaceae.

Introduction

The genus *Zingiber* Mill. is the second largest genus of Zingiberaceae with 100–150 species (Kishor and Leong-Škorničková, 2013) and occurs from China and Japan through south and southeast Asia to northern Australia, with its center of diversity in monsoonal continental Asia (Larsen, 2005). So far 20 taxa of *Zingiber* have been recorded from Myanmar (Kress *et al.*, 2003; Tanaka, 2012a, b; Aung *et al.*, 2015). This small number, however, reflects the lack of recent explorations in Myanmar and possibility of more taxa in this region.

In the course of taxonomic study to revise the genus *Zingiber*, and to clarify their species diversity in Myanmar, field explorations in various sites covering representative regions were carried out from the years 2013 through 2015. During this exploration in 2013 to Natma Taung (local name of Mt. Victoria) National Park located in

Chin State, western Myanmar, the authors discovered a hitherto-undescribed species of *Zingiber*. The plant was growing at the margin of evergreen forest at 1,660 m altitude of the foothill of Mt. Victoria.

The plant is assignable to *Zingiber* sect. *Cryptanthium* Horan. on the basis of inflorescence on procumbent peduncles arising from the rhizome. After examination of its morphology based on the herbarium and spirit specimens and the study of related literature in the neighbouring regions, such as India, China and monsoonal southeast Asia (Dalzell, 1852; Baker, 1892; Gagnepain, 1908; Win, 1975; Wu and Larsen, 2000; Theilade, 1999; Larsen and Larsen, 2006; Tripathi and Singh, 2006; Chaveerach *et al.*, 2007; Kishor and Leong-Škorničková, 2013; Thongam and Konsam, 2014; Triboun *et al.*, 2014; Leong-Škorničková *et al.*, 2015), it has been found that the present collection is an undescribed species similar to, *Z. cernuum* Dalz. in south India and *Z.*

squarrosus Roxb. in India, Nepal and Myanmar. Hence it is described here as a new species with figures based on living and herbarium materials.

Zingiber matupiense M.M.Aung & Nob. Tanaka, *sp. nov.* (Figs. 1 & 2).

Diagnosis: This new species is most similar to *Z. cernuum* Dalz., but differs by its erect leafy

stem, yellowish white recurved bracts with translucent margin, longer floral tubes, lateral staminodes and bright yellow anther crest. On the other hand, it differs from *Z. squarrosus* by its lanceolate, involute bracts and larger yellow labellum.

Rhizomatous herb, up to 1.2 m high. Rhizomes thick, 5 cm in diameter, externally pale brown,

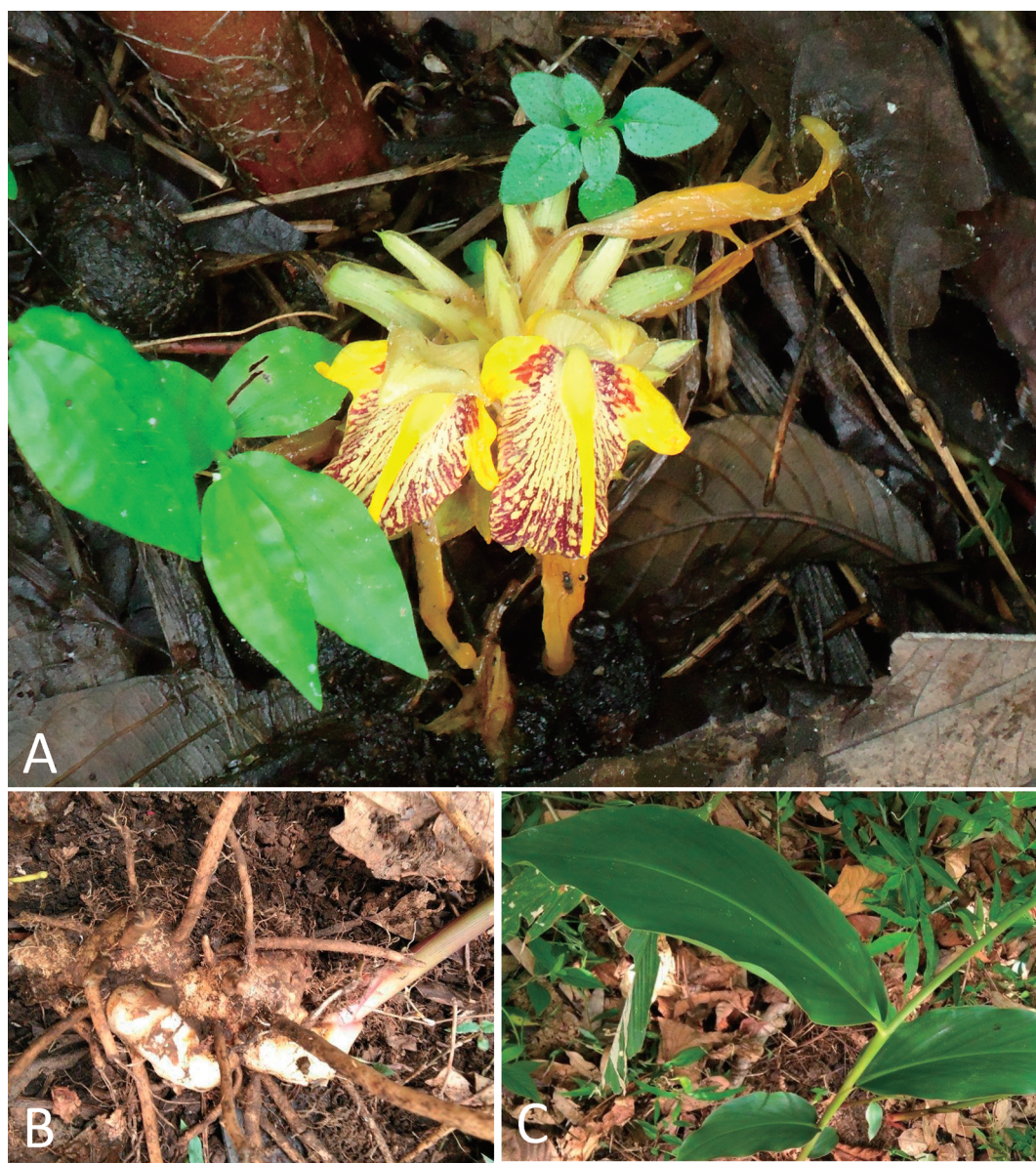


Fig. 1. *Zingiber matupiense* M.M.Aung & Nob.Tanaka, *sp. nov.* A. Flower with recurved bracts. B. Rhizome. C. Leaves and leafy stem.

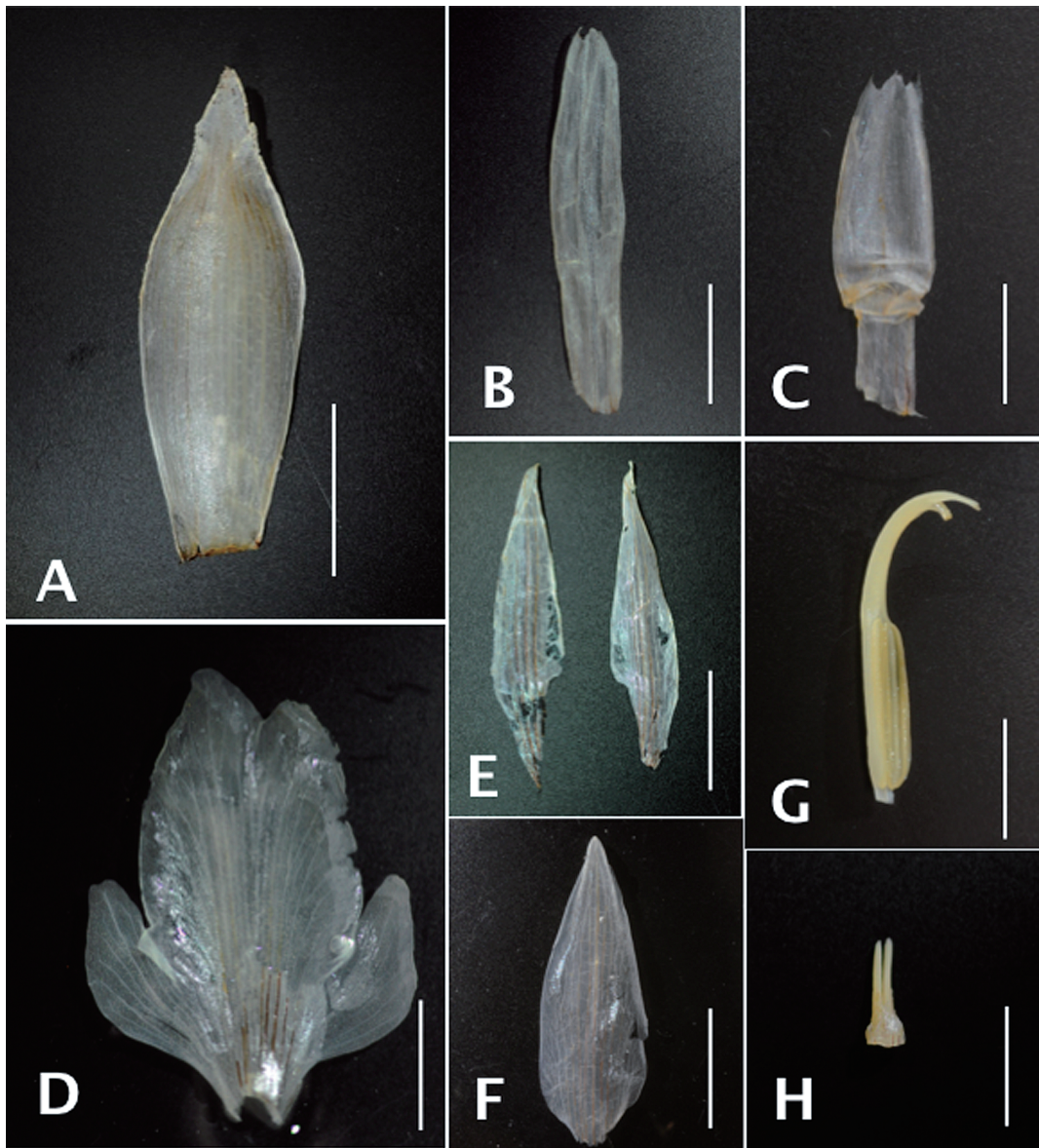


Fig. 2. Floral parts of *Zingiber matupiense* M.M.Aung & Nob.Tanaka, sp. nov. A. Bract. B. Bracteole. C. Calyx. D. Labellum. E. Lateral corolla lobes. F. Dorsal corolla lobe. G. Style and stamen. H. Epigynous glands. (Scale bar = 1 cm)

internally creamy white, slightly aromatic, roots many, strong and fleshy. Leafy shoots erect, with up to 20 leaves, basal 1/3 of pseudostem leafless, fleshy, the lower part reddish green, upper part green; bladeless sheaths 3 or 4, dark red. Leaves 4–10 pairs, petiole almost sessile, pale green, pulvinate at base; ligules white, membranous,

sometimes reddish on the lower leaves, c. 1 cm long, glabrous, apex round, scarious in mature; lamina broadly ovate to oblong-lanceolate, 20–40 cm long, 10–15 cm wide, almost smooth, glabrous, mid-vein basally enlarged, base cordate to cuneate, apex acute to acuminate; adaxially dark green, abaxially pale green, margin more or

less undulate. Inflorescence radical; peduncle procumbent, very short, up to 8 cm long, covered by sheaths, lower ones smaller than upper, glabrous; spike obovate to sub-globose, 8 cm long, 5 cm wide, consisting of 20–25 bracts, coriaceous. Bracts ovate-lanceolate, 4.5–5 cm long, 2–2.8 cm wide, outer bracts greenish white, inner bracts yellowish white, loosely imbricate, recurved, apex acute or shortly acuminate, glabrous, margin hyaline, semi-translucent white, enclosing single flower. Bracteoles lanceolate, white, 3.5 cm long, 1 cm wide, glabrous, apex shortly trilobed. Flowers 7–8 cm long, yellowish white; calyx 1.5–2 cm long, apex shortly tridentate, tubular, membranous, unilaterally split, glabrous; floral tube slender, 4.5–5 cm long, 0.6 cm in diameter at mouth, pale yellow to white towards the base, glabrous, corolla lobes subequal; dorsal corolla lobe c. 3 cm long, 1.2 cm wide, translucent cream at base, yellowish white at apex, ovate-lanceolate, curved; lateral corolla lobes c. 2.7 cm long, 0.7 cm wide, colored as the dorsal lobe; labellum broadly ovate, maroon with creamy yellow blotches, glabrous, central lobe oblong, c. 2.2 cm long, 1.3 cm wide, margin slightly undulate, apex slightly notched or emarginate; lateral staminodes 1.4 cm long, 0.5 cm wide, bright yellow, connate to labellum by basal 1/2–1/3. Anther yellow, c. 2.7 cm long with a crest, anther crest c. 1.4 cm long, wrapped around stigma; connective appendage c. 1.3 cm, yellow; thecae 1.3 cm long, parallel, dehiscing along the entire length. Style white, filiform, glabrous, stigma white with a circular apical aperture surrounded by stiff hairs. Epigynous glands two, c. 6 mm long, linear, pale yellow. Ovary c. 4 mm long, 2 mm wide, white, trilocular with many ovules on axile placenta, densely pubescent. Mature fruits not seen.

Type: MYANMAR. Chin State: Along the roadside between Taingsi village and Hakha road, near the foothill of Mt. Victoria, Matupi Township, Natma Taung National Park, 1,660 m altitude, 21°50.349'N 93°28.343'E, 12 July 2013, *Mu Mu Aung et al.* 094216 (holotype-TNS, isotype-RAF).

Phenology: Flowering from June to August; fruiting period unknown. Flowers open in the morning.

Etymology: The specific epithet is derived from the name of type locality, Matupi.

Distribution: Known only from the type locality.

Habitat and ecology: Evergreen forest margins in shade, c. 1,660 m above sea level.

Note: Although its character has some similarities to *Z. cernuum* Dalz. and *Z. squarrosum* Roxb., the key diagnostic characters are given in Table 1. *Zingiber cernuum* known as the “curved-stem ginger” (Cooke, 1908) which was described from South India and considered there to be a common endemic (Kanivita *et al.*, 2007). *Zingiber squarrosum* was described by Roxburgh (1810), and he mentioned that the plant was a native of Pegu (Bago Region), lower part of Myanmar. Gross morphology of the new species distinguishes it from *Z. cernuum* by erect leafy shoots, larger and ovate ligules, prominently recurved bracts, bright yellow lateral staminodes, and slightly notched or emarginated apex of the labellum.

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