

Curcuma pambrosima sp. nov. (Zingiberaceae) from central Vietnam

Jana Leong-Škorničková and Ngọc-Sâm Lý

J. Leong-Škorničková (jana_skornickova@seznam.cz), The Herbarium, Singapore Botanic Gardens, 1 Cluny Road, 259569 Singapore. – N.-S. Lý, The VNM Herbarium, Inst. of Tropical Biology, 85 Trần Quốc Toản Road, District 3, Hochiminh City, Vietnam.

Curcuma pambrosima (Zingiberaceae), a new species from central Vietnam, is described and illustrated.

The Indochinese region is certainly a diversity hotspot for the family Zingiberaceae, although the flora is not yet well known. The last comprehensive account of the family in this region is over a century old (Gagnepain 1908). The main centre of diversity of the genus *Curcuma*, with the number of species anticipated to reach 120 (Škorničková et al. 2004, Leong-Škorničková et al. 2007), is in India, Burma and Thailand. Cambodia, Laos and Vietnam are, however, likely to have an equally high diversity for this genus.

During recent floristic explorations in central Vietnam, several interesting ginger species were collected. With the revision of the genus *Curcuma* for the 'Flora of Cambodia, Laos and Vietnam' in progress by the first author, the following species proved to be new and is described below.

Curcuma pambrosima Škorničk. & N. S. Lý sp. nov. (Fig. 1, 2)

Curcuma rhombae Mood and K. Larsen similis, rhizomatibus ovoideo-lanceolatis 4–9 cm longis 0.7–1.5 cm latis (nec ca 3 cm longis 1.5 cm latis), laminis elliptico-lanceolatis (nec late ellipticis), inflorescentia in pedunculo supra terram elevata, spicis 10–25 cm longis 6–8 cm latis bracteis laxis reflexis roseis compositis (nec e solo emergenti, spicis ca 9.5 cm longis 5.5–6.0 cm latis bracteis compressis rectis rubris compositis), floribus luteis corollae lobis roseis (nec floribus aurantiacis, corollae lobis rubris) differt.

Type: Vietnam. Phú Yên Province, Đông Hòa Dist., Hòa Đông Commune, Phú Diễm village. 20 Sep 2009, Lý-316 (holotype: VNM, isotypes: E, P, SING, VNM).

English translation of Latin diagnosis

Similar to *C. rhomba* Mood & K. Larsen but differs by ovoid-lanceolate rhizomes, 4–9 × 0.7–1.5 cm (vs ovoid, ca 3.0 × 1.5 cm); lamina elliptic-lanceolate (vs broadly ellip-

tic); inflorescence on a peduncle elevated above ground; spike ca 10–25 × 6–8 cm, composed of loose reflexed pink bracts (vs emerging at ground level, spike ca 9.5 × 5.5–6.0 cm, composed of compressed straight red bracts); and yellow flowers with pink corolla lobes (vs orange flowers with red corolla lobes).

Rhizomatous herb to 80 cm tall. Rhizome simple, ovoid-lanceolate, 4–9 × 0.7–1.5 cm, externally light brown, internally cream white, slightly aromatic, root tubers ovate, 2.5–4.0 × 1.5–2.0 cm, externally light brown, internally pure white. Pseudostem to 10–25 cm long, green, composed of leaf sheaths and sheathed by 2–4 leafless glabrous sheaths, innermost sheaths as long as the pseudostem, green with pinkish tinge towards the base, outer ones gradually decreasing in length, whitish green to white with pink tinge, becoming dry and papery; ligule 4–5 mm long, bi-lobed, hyaline, translucent greenish white, glabrous, hairy on the margin with hairs ca 0.3 mm long. Leafy shoot with 1–3 leaves at flowering, ultimately to 10 leaves; petiole 5–25 cm long (except first leaves with shorter petioles), green, glabrous; lamina elliptic-lanceolate, ca 20–35 × 4.5–7.0 cm, glabrous on both surfaces, adaxially bright green, abaxially lighter green, margin hyaline, ca 0.2 mm wide, glabrous, tip acuminate, slightly hairy at the very tip, base oblique. Inflorescence lateral in the beginning of the season, many flowered. Peduncle ca 10–25 cm long, sheathed by 3–5 leafless glabrous sheaths, the innermost as long as the peduncle, green with pinkish tinge towards the base, outer ones gradually decreasing in length, whitish green to white with pink tinge, becoming dry and papery. Spike 10–25 cm × ca 6–8 cm, coma inconspicuous. Bracts 7–34 per inflorescence, all except the uppermost 1–3 fertile (these are smaller), lower bracts rhombic, towards the top becoming ovate, 3.0–4.5 × 2–3 cm, white at the base, gradually pink towards the top, glabrous, connate to one another in the lower third. Cincinni with 4 flowers at the base of the inflorescence, 2–3 flowers in the middle part and a single

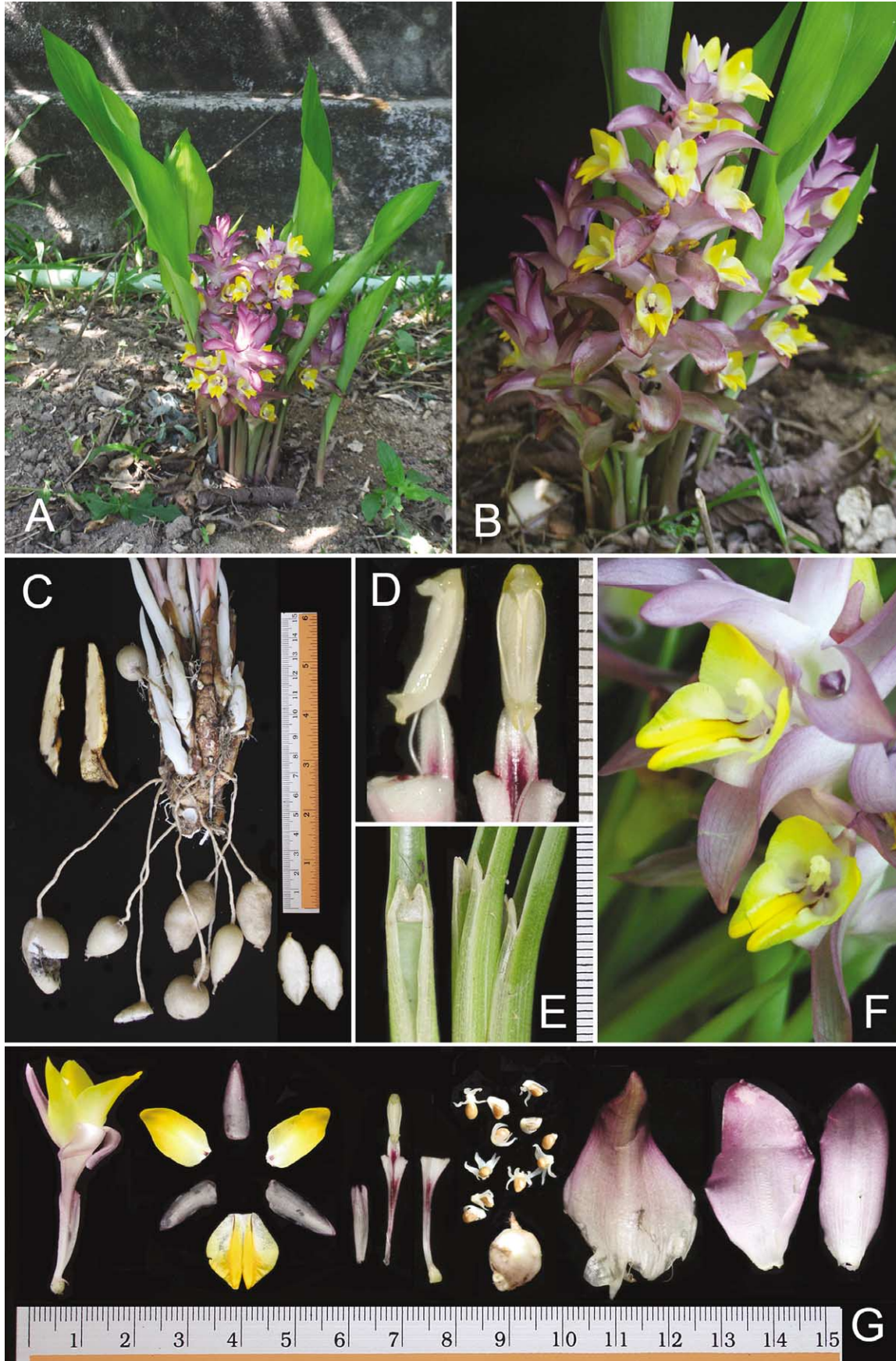


Figure 1. *Curcuma pambrosima* Škorničk. & N. S. Lý sp. nov. (A) habit, (B) inflorescence, (C) rhizome and root tubers, (D) detail of anther (side and front view), (E) detail of ligule, (F) flower, (G) flower dissection, fruit, seeds and bracts. Based on Lý-316; photos by Sâm Lý.



A



B



C



D

Figure 2. *Curcuma pambrosima* Škorničk. & N. S. Lý sp. nov. (A), (B) inflorescences sold at different stalls of vegetable market in Đông Hòa District, (C) inflorescences in basket, (D) vegetable soup with inflorescences of *C. pambrosima*. Photos by Sâm Lý.

flower at the top. Bracteoles minute, one per flower, linear-triangular, ca 3–8 × 1–2 mm at base, hyaline, with light pink tinge. Flowers ca 4–5 cm, exerted from the bracts. Calyx ca 15 mm long, teeth 3, unilaterally split for 5–6 mm, white with pink tinge towards the tip, glabrous. Floral tube ca 2.0–2.2 cm long, narrowly funnel-shaped, externally white in the basal part, with light pink tinge in the upper part, very shortly hairy, internally white in basal half turning deep purple in apical half, with dorsally placed groove holding style, the purple part hairy; dorsal corolla lobe triangular ovate, 15–17 × 6–7 mm, concave, glabrous, light pink, apex acute mucronate with mucro ca 1 mm long, glabrous; lateral corolla lobes 15 × 5–6 mm, triangular ovate, tip rounded, slightly concave, glabrous, light pink. Lateral staminodes ovate-rhomboid with asymmetric base, 12–15 × 8–10 mm, light yellow to white with dark purple patch at base, bright yellow towards the tip. Labellum ca 13–16 × 12–14 mm, orbicular-rhombic, apex split ca 3–8 mm, sides of the labellum whitish at base turning yellow towards the tip, deep yellow band in the centre with two dark red lines at the base. Anther spurred, light yellowish, glandular hairs present on the sides and back of the connective, anther thecae ca 7 mm long, cream white; filament ca 4.5 mm long, dark purple at the base, white towards top, ca 3 mm broad at base, ca 1.5 mm at the top, shortly hairy. Anther spurs ca 1.5 mm long, curved inwards, light yellow, darker towards tips, anther crest present, ca 2.5 mm broad, 1.5 mm long, yellow (darker than the rest of connective tissue). Stigma white, ostiole ciliate. Epigynous glands two, yellowish white, ca 4 mm × ca 0.4 mm in diameter, with blunt apex. Ovary 3–4 × 2.0–2.5 mm, trilobular, cream white, sparsely shortly hairy. Fruits globular, 11 × 10 mm, cream white, sparsely shortly hairy, nearly glabrous. Seeds obovate, 4–5 mm, light brown, shiny, with white lacinate aril. Description based on living and spirit material Lý-316.

Phenology, habitat and distribution

The new species is flowering in Aug–Sep and fruiting in Sep–Oct. It is cultivated along the Đà Rằng river banks in sandy soil. So far, it is known only from the type locality. During a revision of herbarium material from various herbaria, we noticed two or three specimens at herbarium P, collected from central Vietnam, which may be *C. pambrosima*, but the flowers are not in good shape and the label lacks information that would allow a definite confirmation of the identity of the specimens.

Etymology, vernacular names and uses

The specific epithet *pambrosima* is derived from Greek *pan* (=all) and *brosimos* (=edible) to indicate that local people eat nearly all parts of this plant (for the reasons of Greek grammar, the n changes into m when these two words are joined).

The species is locally called Củ Giở, Củ means tuber and Giở means time. According to local people, the name reflects the fact that the species appears at the same time every year. *Curcuma pambrosima* is often cultivated as a local vegetable. Inflorescences and root tubers are sold in the market when in season. Inflorescences and sometimes also young leafy shoots, which are strongly aromatic, are used for preparation of soups and various dishes (Fig. 2). Root

tubers are harvested around Jan–Feb. These are consumed cooked, or the starch may be extracted for further use.

Similar species

Three new *Curcuma* species, *C. bicolor* Mood & K. Larsen, *C. glans* K. Larsen & Mood and *C. rhomba* Mood & K. Larsen, have recently been described from southeast Asia (Mood and Larsen 2001). *Curcuma pambrosima* is similar to them in several characters, like the lack of a clear distinction between fertile and coma bracts, the overall shape of the flower and they are similar with respect to the shape of the anther. The main differences between *C. pambrosima* and the three species named above are that *C. pambrosima* has narrowly ovate-lanceolate rhizomes and elliptic-lanceolate lamina, while the other three species have more or less round or ovate rhizomes and lamina elliptic or broadly elliptic. In addition the inflorescence arises on a peduncle composed of rather loosely arranged bracts compared to rather compact inflorescences exposed at ground level in the three above-mentioned taxa. So far, we have observed that *C. pambrosima* flowers at the beginning of the season on a separate peduncle. As it is a seed-setting species, it may also be capable of flowering centrally later in the season, but this has yet to be established by further observations. We also expect that some degree of colour variability of bracts or flower parts might be reported in the future.

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