



Curcuma saraburiensis (Zingiberaceae), a new species from Thailand

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(Manuscript received 17 February 2019; accepted 17 June 2019; online published 26 June 2019)

ABSTRACT: *Curcuma saraburiensis* sp. nov. (Zingiberaceae), a new species from Saraburi Province, Central Thailand, is described, illustrated and photographed. The dominant characteristics of this species are; the fertile bracts are light green with light pale green or white longitudinal line and 2 white circles patch. Coma bracts; outer glabrous, light green with green longitudinal line alternating with light green or white lines, inner glabrous, white with green edges. Lateral staminodes narrowly oblong, white with 3–4 red lines (2 red lines in the middle, half of the length of the staminodes and 1–2 lines found at the edge of the staminodes). Labellum obovate, deep incision up to 9 mm, white with 2 purple patches on ether sides and 4 red lines, 2 lines at each side.

KEY WORDS: *Curcuma saraburiensis*, New species, Saraburi, Thailand, Zingiberaceae.

INTRODUCTION

Curcuma L. is one of the largest genera in family Zingiberaceae with ca. 80 species, distributed in the tropical Asia from India to South China, Southeast Asia, Papua New-Guinea and Northern Australia (Sirirugsa *et al.*, 2007). In Thailand, 38 species were recorded and distributed throughout the country, especially in the north and the northeast which often found in the lower ground in deciduous forests, mixed deciduous forest, dry evergreen forest and pine forest (Maknoi and Jenjittikul, 2006). Many species were discovered by several botanists such as Sirirugsa and Newman (2000), Maknoi and Jenjittikul (2006), Maknoi *et al.* (2011) and Maknoi and Sirirugsa (2012).

In the deciduous forests of the mountains in Phra Phutthabat District, Saraburi province, an undescribed species of *Curcuma* was found at the height of 50–300 meters above sea level, the soil is sandy loam. In some points, they grow in the soil of the rock basin. This species is here described, illustrated and photographed under the name of *Curcuma saraburiensis* sp. nov.

TAXONOMIC TREATMENT

Curcuma saraburiensis Boonma & Saensouk, *sp. nov.*

Figs. 1 & 2

Type: THAILAND. Saraburi Province, Phra Phutthabat District, 21 October 2017, Boonma. *T. no. 2* (holotype: BKF!; isotypes: BK!, KKU!, QBG!, TAI!)

Perennial herb with a short ovoid rhizome, light brown inside and fragrant, 1–2 × 2–3 cm. Root tuberous (found in late raining season until late summer) with fibrous roots. Leafy shoot 30–50 cm tall; bladeless sheath 1–2, green with red at base or red. Leaf sheaths green with red at base; ligule broadly curve, 2–4 mm;

petiole green, 8–14 cm. Leaves 4–7, elliptic–narrow ovate, 16–22 cm long and 7–9 cm wide, apex acuminate, base obtuse–attenuate, margin entire, green on both surfaces, upper glabrous and below pubescent. Inflorescence terminal on the pseudostem, cylindrical, 8–12 cm long; peduncle green, 20–25 cm long, glabrous. Fertile bracts containing 3–7 flowers in each bract, broadly ovate, apex rounded, light green with light pale green or white longitudinal line and 2 white circles patch, 2–2.5 × 2–2.5 cm. Coma bracts broadly ovate, outer glabrous, light green with green longitudinal line alternating with light green or white lines, inner glabrous, white with green edges, 2–3 × 2–3 cm, apex rounded–obtuse. Bracteoles white, broadly ovate, ca. 8 mm long, acute apex. Flowers white with light pale yellow. Calyx white, tubular, 15–18 mm long, glabrous. Corolla white, glabrous, shorter than bract; dorsal lobe, lanceolate–ovate, ca. 10 × 5–7 mm, light pale yellow; lateral lobes, lanceolate–ovate, 7–10 × 5–7 mm, light pale yellow. Lateral staminodes narrowly oblong, ca. 14 × 2–3 mm, rounded apex, white with 3–4 red lines. Labellum obovate, deep incision up to 9 mm, white with 2 purple patches on ether sides and 4 red lines, 2 lines at each side, 8–10 × 12–14 mm. Stamen white; anther 5–6 mm long; filament flat; spurs absent. Ovary subspherical, 1–2 × 1.5–2 mm, 3 carpels, glabrous. Style very slender. Stigma white 1–2 × 1–2 mm, glabrous. Nectary glands 2, very slender, ca. 2 mm long. Seed light brown with white lacinate arils, smooth surface, ca. 3 × 5 mm.

Etymology: The specific epithet of the new species is collected from ‘Saraburi Province’, the first discover place.

Distribution: Endemic to Thailand, currently found in the type locality (Phra Phutthabat District, Saraburi Province)

Ecology: Deciduous forest 50–300 m above sea level.

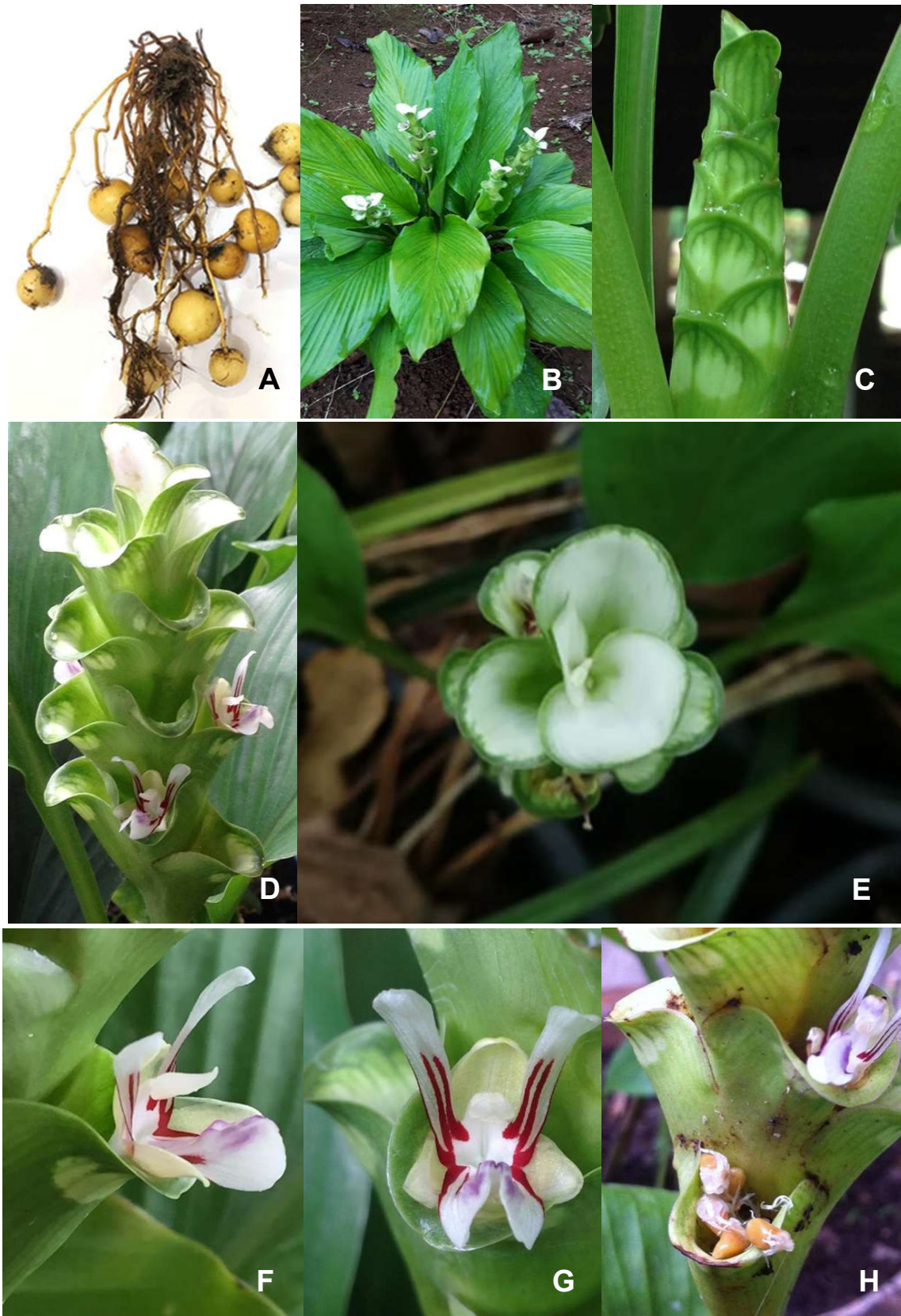


Fig. 1. *Curcuma saraburiensis* Boonma & Saensouk; A. rhizome; B. habitat and inflorescences; C. closed form of young inflorescence; D. mature inflorescence; E. top view of mature inflorescence; F. flower-side view; G. flower-front view; H. seeds with white arils.

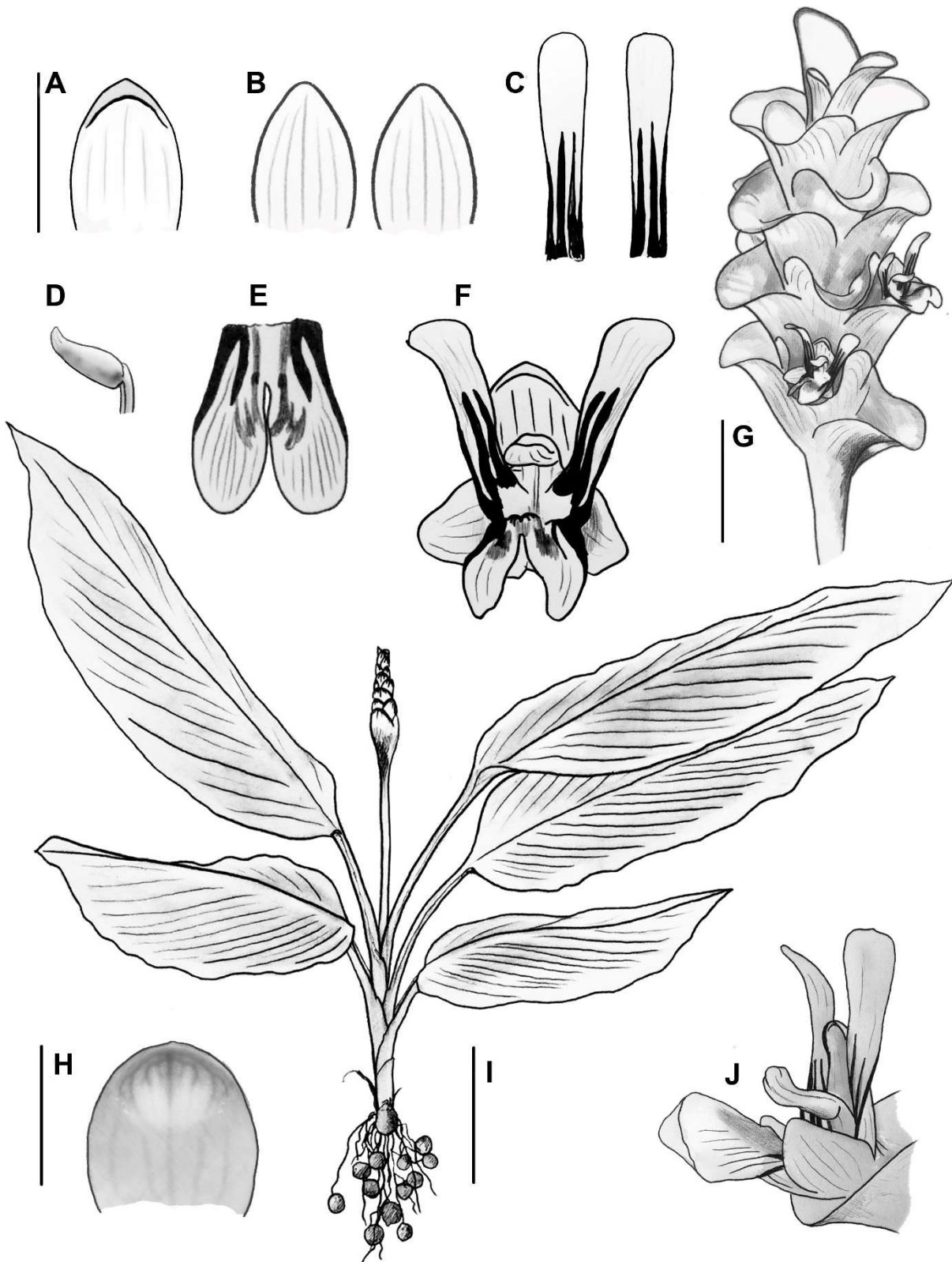


Fig. 2. *Curcuma saraburiensis* Boonma & Saensouk; **A.** dorsal corolla lobe; **B.** lateral corolla lobes; **C.** staminodes; **D.** stamen; **E.** labellum; **F.** flower-front view; **G.** inflorescence; **H.** bract; **I.** habit; **J.** flower-side view (Scale bars: **A-E** and **J** = 1 cm; **G** = 3 cm; **H** = 2 cm; **I** = 10 cm); Drawn by Thawatphong Boonma.

**Table 1.** Comparison between *Curcuma parviflora*, *C. larsenii*, *C. rhabdota* and *C. saraburiensis*.

Characters	<i>C. parviflora</i>	<i>C. larsenii</i>	<i>C. rhabdota</i>	<i>C. saraburiensis</i>
Rhizome (inside)	light brown	yellowish	light brown	light brown
Bracts	ovate, apex acute-obtuse green	obovate, glabrous, green with a white margin, apex truncate, recurved	ovate, apex rounded, dark red or reddish brown longitudinal line, alternating with a light green stripe.	broadly ovate, apex rounded, light green with light pale green or white longitudinal line and 2 white circles patch
Coma bracts	white, apex acute	white or green with white stripes at apex	white with dark red or reddish brown longitudinal stripe at the middle	outer glabrous, light green with green longitudinal line alternating with light green or white lines, inner glabrous, white with green edges
Staminodes	narrowly obovate, ca. 8 x 3.5 mm, apex acute-obtuse, white or white with blue apex	oblong, spreading, 4.5–6.5 x 1.8–2.3 mm, creamy white to dark orange with translucent veins, red streak along margin near labellum, sparsely hairy at base, apex acute, margin eroded	obovate, rounded apex, purple with red line at bottom edge	narrowly oblong, white with 3–4 red lines.
Labellum	obovate, ca. 9 x 6 mm, apex bilobed, white with blue apex, edge fringed	broadly ovate, deeply divided 2.5–3.5 mm, creamy white to dark orange with translucent veins, longitudinal red-streaked on the lower half, raised-band on either sides of sinus creamy white or yellow	elliptic, edge folded down, purple with red line at bottom edge	obovate, deep incision up to 9 mm, white with 2 purple patches on ether sides and 4 red lines, 2 lines at each side.
Reference	Maknoi and Sirirugsa, 2012	Maknoi and Jenjittikul, 2006	Sirirugsa and Newman, 2000	

Phenology: Flowering period in rainy season (June–September) and fruiting in October.

Vernacular names: "Saraburi-Rum-Luek"

(สรบุรีรำลึก)

Uses: Auspicious ornamental plants.

DISSCUSSION

When comparing all *Curcuma* L. species reported in previous study by Sirirugsa *et al.* (2007) and many botanists, the morphology of *Curcuma saraburiensis* sp. nov. was similar to *C. parviflora*, *C. larsenii* and *C. rhabdota* in some characters but differs in its fertile bracts are light green with light pale green or white longitudinal line and 2 white circles patch. Coma bracts; outer glabrous, light green with green longitudinal line alternating with light green or white lines, inner glabrous, white with green edges. Lateral staminodes narrowly oblong, white with 3–4 red lines. Labellum obovate, deep incision up to 9 mm, white with 2 purple patches on ether sides and 4 red lines, 2 lines at each side. (Table 1 and Figs. 1–2).

ACKNOWLEDGMENTS

We are deeply indebted to Mahasarakham University, Walairukhavej Botanical Research Institute, the National Research Council of Thailand and Brio Garden for their financial support and facilities during this study. Warm thanks to the Curators and staff of the herbaria visited (AAU, BK, BKF, E, K, P, KKU and QBG). The author thanks to Mongkol Meekrong, Jatuporn Sunavee and Thanaphon Thanayodphokhin for sources information, photographs and helping in the habit area.

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