

Garcinia nuntasaenii (Clusiaceae), a new species from Thailand

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ABSTRACT

Garcinia nuntasaenii Ngerns. & Suddee (Clusiaceae), a new species from north-eastern Thailand, is described and illustrated. It is a dioecious shrub in dry evergreen forest at ca 150–220 m altitude.

KEYWORDS: *Garcinia*, Clusiaceae, new species, taxonomy, Thailand.

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INTRODUCTION

Garcinia is the largest genus in the family Clusiaceae (Guttiferae). It is estimated that there are 400 species (Whitmore, 1973), mostly in tropical Asia, Africa and Polynesia (Anderson, 1874; Maheshwari, 1964; Ridley, 1967). Significant previous studies on *Garcinia* revealed that Indo-China had 34 species (Gagnepain, 1943), Java 8 species (Backer and Bakhuizen, 1963), the Malay Peninsula 36 species (Ridley, 1967), Malaya 49 species (Whitmore, 1973), Ceylon 10 species (Kostermans, 1980), India 35 species (Singh, 1993), and China 20 species (Li *et al.*, 2007).

Mr Narong Nuntasaen, a staff member of BKF, first found and collected fruiting specimens of a *Garcinia* sp. in December 2008 from Phu Wua Wildlife Sanctuary, Bung Khla District, Bueng Kan Province. He then collected male flowering specimens of this species in January 2009 from the same place. During field work in July 2015, with Mr Nattanon Meeprom, a masters student in the Department of Botany, Kasetsart University, we found and collected male and female flowering specimens of this species from the Upper Northeast Wild Plants Conservation Center, Bung Khla District, Bueng Kan Province.

These materials are different from all previously recorded species of *Garcinia* in a number of ways and therefore, a new species of *Garcinia* from north-eastern Thailand is described.

DESCRIPTION

Garcinia nuntasaenii Ngerns. & Suddee, **sp. nov.**

Differs from the other *Garcinia* species in Thailand and neighbouring countries in being a shrub 1–2 m tall, with the petiole short, the leaf apex rigid, the leaf base subcordate, the leaf texture coriaceous, the terminal part of leaf conduplicate, twisted and recurved, the inflorescences terminal or at leafless nodes, fascicles, the flowers 4-merous, the fruits depressed globose, 0.5–0.7 by 1–2 cm, 4–6-lobed, and 4–6-sulcate. Type: Thailand, Bueng Kan, Bung Khla District, Phu Wua Wildlife Sanctuary, in dry evergreen forest, 220 m alt., 13 Dec. 2008, fruiting specimens, *Nuntasaen 10* (holotype **BKF**; isotype **BKF**). Figs. 1–3.

Plants dioecious, shrub 1–2 m tall; latex white, turning pale yellow when exposed to the air, sticky; branches decussate, horizontal; branchlets 4-angular.

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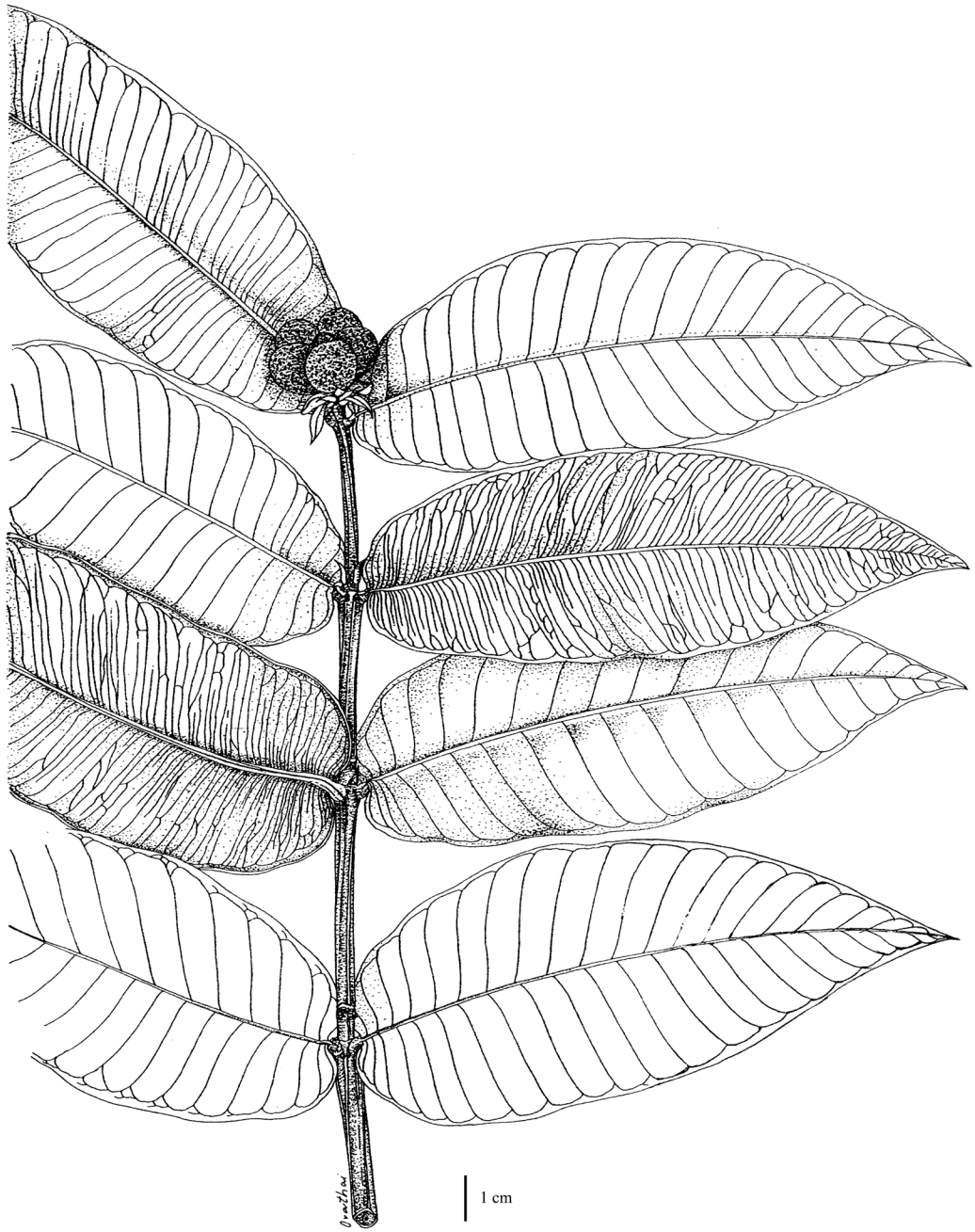


Figure 1. *Garcinia nuntasaenii* Ngerns. & Suddee: branch, leaves and fruit. Drawn by Orathai Kerdkaw.

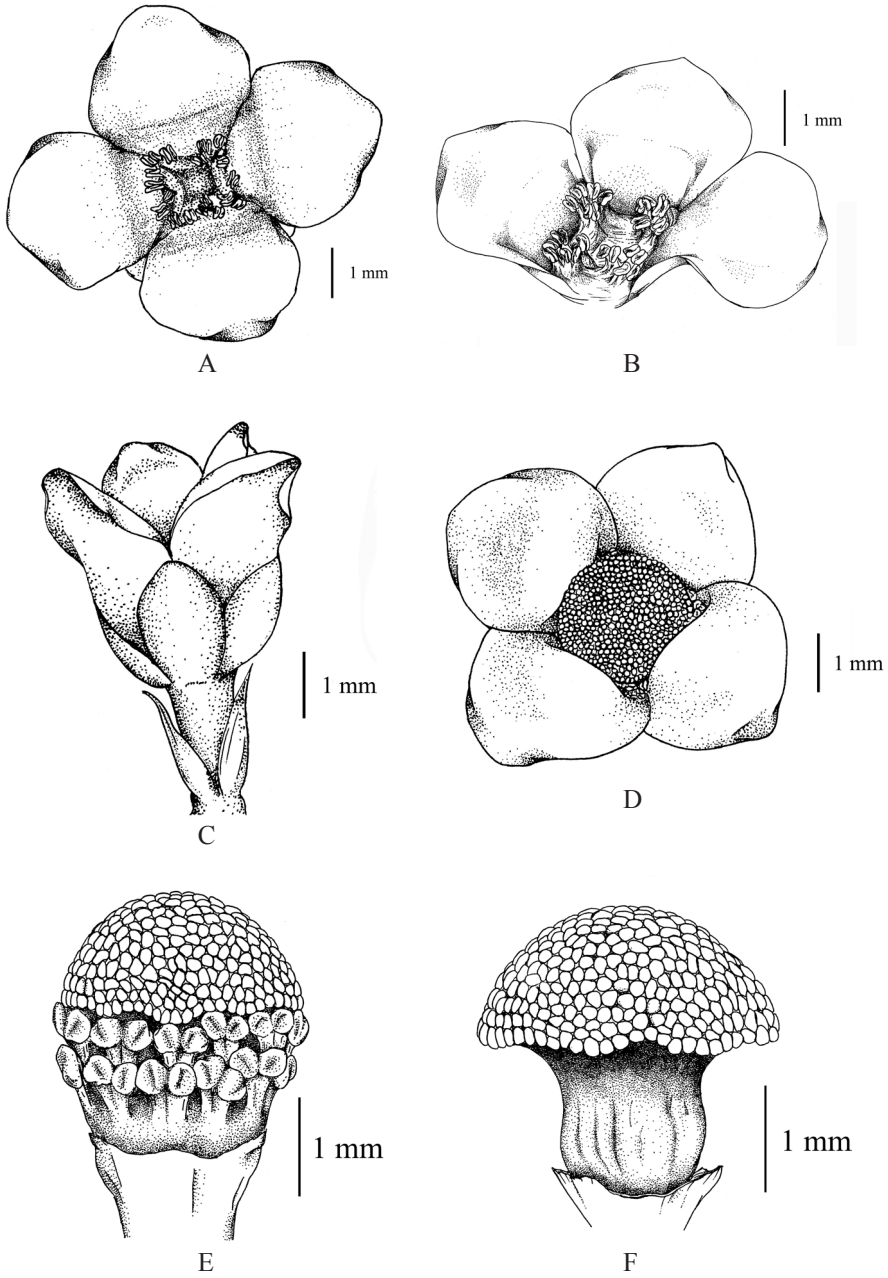


Figure 2. *Garcinia nuntasaenii* Ngerns. & Suddee: A–C. male flowers; D. female flower; E. female flower showing stigma and staminodes; F. female flower showing pistil. (E–F. removed sepals and petals). Drawn by Paweena Wessapak.



Figure 3. *Garcinia nuntasaenii* Ngerns. & Suddee: A. habit; B. branches and leaves; C. stem with latex; D. inflorescences with male flower buds; E. male flower; F–G. female flowers; H–I. fruits. Photographed by Chatchai Ngernsaengsaruy (A–G), Narong Nuntasaen (H) and Manop Poopath (I).

Bark smooth, green when young, turning dark brown when mature, usually lenticellate; inner bark pale yellow. *Terminal bud* concealed between the bases of the uppermost pair of petioles. *Leaves* decussate; petiole 2–10 mm long, glabrous, transversely rugose, with basal appendage clasping the branch; blade lanceolate-ovate, ovate or elliptic, 6–17 by 3–7.5 cm, apex acuminate or acute and rigid, base subcordate, margin thick, entire and slightly undulate (repand), coriaceous, terminal part conduplicate, twisted and recurved, glossy dark green above, paler below, glabrous on both surfaces, midrib shallowly grooved above, raised below, lateral veins 12–20 pairs, visible on both surfaces, towards the margin connected in distinct loops and united into an intramarginal vein, tertiary veins reticulate, visible on both surfaces; young leaves red. *Inflorescences* terminal or at leafless nodes (in axils of fallen leaves), cymose, fascicles; bracts narrowly triangular or triangular, 2–10 by 1.5–2.5 mm, apex acute or acuminate, somewhat thick. *Flowers* 4-merous, pale yellow or creamy white, 8–10 mm in diam.; pedicels short; sepals and petals decussate, somewhat thick; sepals obovate or elliptic, 3–6 by 2.5–3.5 mm, concave, apex rounded; petals broadly obovate, 5.5–8.5 by 3.5–7 mm, apex rounded, terminal part recurved. *Male flowers*: stamens numerous, fascicles 4, connate, forming a central 4-sided mass; filaments short; anthers 0.3–0.5 mm long; pistillode absent. *Female flowers*: staminodes present; ovary depressed globose, 1.5–2 by 2–3 mm, shallowly 4–6-lobed, 4–6-loculed; style short, thick; stigma hemispherical, 1.5–2 by 2.5–3.5 mm, papillate. *Fruits* berry, depressed globose, 0.5–0.7 by 1–2 cm, 4–6-lobed, 4–6-sulcate, green with white dots, turning red when ripe, glabrous, glossy, with persistent sepals; stigma circular, flat, radiately lobed or not; fruiting pedicels short. *Seeds* 4–6, with sarcotesta.

Thailand.— NORTH-EASTERN: Bueng Kan [Bung Khla District, Phu Wua Wildlife Sanctuary, 13 Dec. 2008, fruits, *Nuntasaen 10* (holotype **BKF**; isotype **BKF**); *ibid.*, 1 Jan. 2008, male flowers, spirit specimen, *Nuntasaen 11* (**BKF**); *ibid.*, 12 Feb. 2015, *Poopath 981-1, 981-2* (**BKF**); *ibid.*, 24 July 2015, female flowers, *Ngersaengsaruy & Meeprom 754* (**BKF**); Bung Khla District, The Upper Northeast Wild Plants Conservation Center, 24 July 2015, male flowers, *Ngersaengsaruy & Meeprom 750, 751* (**BK, BKF**); *ibid.*, 24 July 2015, female flowers, *Ngersaengsaruy & Meeprom 752, 753* (**BK,**

BKF); Nakhon Phanom [Ban Phaeng District, Phu Langka National Park].

Distribution.— Known only from Bueng Kan and Nakhon Phanom provinces, north-eastern Thailand (but to be expected in Laos).

Ecology.— Shaded areas in dry evergreen forest at 150–220 m altitude. Flowering: December–July; fruiting: December–April.

Vernacular.— Chang nga ek (ช้างงาเอก) (Bueng Kan, Nakhon Phanom).

Etymology.— The specific epithet, *nuntasaenii* honours Mr Narong Nuntasaen, the collector of the type specimen.

IUCN conservation assessment.— *Garcinia nuntasaenii* is known only from three small populations in Bueng Kan and Nakhon Phanom provinces, north-eastern Thailand, which the area of occupancy is estimated to be less than 2000 km². The root of this species is used for medicinal purpose by nearby villagers, the population is suspected to be declining. We therefore consider the conservation assessment ‘Vulnerable’ (VU A4aB2a) (IUCN, 2001).

Notes.— The leaves have a sour taste. The flower buds have pink or pink-pale yellow sepals.

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