

Two new Records of *Goniothalamus* (Annonaceae) from Thailand

Yuttaya Yuyen,¹ Piya Chalermglin,² and Vilaiwan Anusarnsunthorn¹

Abstract.—*Goniothalamus cheliensis* H. H. Hu, previously known from southwestern Yunnan, is reported from northern Thailand and *Goniothalamus repevensis* Pierre ex Fin. & Gagnep., previously known from Cambodia and Laos, is reported from southeastern Thailand. These species are here described and illustrated.

The first report of *Goniothalamus* in Thailand listed 9 species (CRAIB, 1925). Twenty-one species were reported by BYGRAVE (1997). One more species was reported by us in 2006 (YUYEN ET AL., 2006)

Goniothalamus cheliensis H. H. Hu, Bull. Fan Mem. Inst. Biol. 10: 121–128. 1940. Figure 1.

Evergreen treelet about 3 m high; bark striate, pale grey; branchlets straight, brown, densely brown tomentose. *Leaves* simple, distichous; blades coriaceous, obovate, 56–66 cm long, 16–20 cm broad, apex caudate, broadly acute at the base; dull glossy brown above when dry, brown below; glabrous above, with some brown tomentum on the midrib, midrib densely brown tomentose below, especially so on veins and margins; main nerves *c.* 24–32 pairs, secondary nerves arching, anastomosing, fine above, prominently raised below; margins entire, revolute. *Petioles* 2.5–3 cm long, dorsally grooved, densely brown tomentose. *Flowers* solitary or in groups from woody tubercles on the main stem or main branches; pedicels about 1.5 cm long, densely brown tomentose, with 4–5 bracts at the base. *Sepals* 3, coriaceous, broadly ovate, 4 cm long, 2.5 cm broad, apex acuminate; brown sericeous on both sides, especially on the main veins outside, except at the base inside, green. *Petals* 6, coriaceous, greenish-yellowish, outer 3 ovate, 6.5 cm long, 3.5 cm broad; apex acute; rusty puberulous on both sides, especially on the main veins outside, except at the base inside; veins prominent inside; claw broad; inner 3 ovate, 3.3 cm long, 1.8 cm broad, velutinous outside, especially on main veins, glabrous inside; claws broad. *Stamens* numerous, 3 mm long, connectives convex. *Pistils* several, 8 mm long, vertically grooved; ovary cylindrical, densely brown tomentose; stigma cylindrical, incurved, canaliculate, glabrous; ovules 4.

Thailand.—North: Nan, Doi Phu Kah; Yuyen 220 (23 April 2004, CMU)

Distribution.—Southwestern Yunnan

Habitat.—Primary, lower montane evergreen forest at 1,000 m elevation

Phenology.—Flowering March–April, Fruiting September (Yunnan)

¹Department of Biology, Faculty of Science, Chiangmai University, Chiangmai 50200, Thailand.

²Thailand Institute of Scientific and Technological Research (TISTR), Bangkok, Thailand.

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Notes.—According to Hu's description, the branchlets of *G. cheliensis* are black hirsute (specimens collected by C. W. Wang from Che-Li Hsien, Maan-Shang, southwestern Yunnan), but in Yuyen's specimens the branchlets are densely brown tomentose. The specific epithet refers to the type locality. This species has the biggest leaves for *Goniothalamus* in Thailand.

Goniothalamus repevensis Pierre ex Fin. & Gagnep., Bull. Soc. Bot. France 53 Mem. 4: 117. 1906; Finet & Gagnepain, Fl. Gén. de l'Indo-Chine I: 89, pl. 1XB. 1907; Ast, Fl. Gén. de l'Indo-Chine Supplément: 98. 1938. Figure 2.

Evergreen shrub about 1 m high; bark glabrous, finely striate, brown; branchlets straight, sparsely rusty puberulous to glabrescent. *Leaves* simple, distichous; blades thin; lanceolate, 9–9.5 x 3–3.5 cm, apex acuminate, base cuneate, margins entire; young blades densely rusty puberulous, older blades glabrous; midrib sunken and grooved above, raised below; secondary nerves 10–11 pairs, obscure on both sides, fine, arching and anastomosing 5 mm below the margin, finer venation reticulate, obscure, but visible in transmitted light; green above, pale green below. *Petioles* 4–5 mm long, dorsally grooved, glabrous. *Flowers* solitary, axillary; pedicels about 8 mm long, thickened apically, sparsely rusty puberulous to glabrous; bracts 5–6 basal, scale-like, green. *Sepals* 3, greenish, coriaceous, triangular, 4 mm long, 7 mm broad, apex acute; sparsely adpressed rusty puberulous outside, glabrous inside. *Petals* 6, coriaceous, yellowish, becoming pink-red when older; outer 3 ovate-elliptic, 3–3.5 x 1.5–1.8 cm, apex acuminate, with sparse indumentum as on the outside of the sepals on both sides, venation obscure, reticulate; inner 3 similar to the outer 3, but smaller, 10 x 5 mm, marginally connate above the claws. *Stamens* numerous, 1 mm long; connectives thick, truncate, papillose. *Pistils* numerous, 4 mm long, vertically grooved; stigma cylindrical, curved, canaliculate, glabrous; style short; ovary cylindrical, densely rusty tomentose; ovules 1–2. *Monocarps* 5–11, oblong, 1.5–2 x 0.8–0.9 cm, glabrous, green, orange when ripe; stalks 6 mm, *Seeds* 1–2, ellipsoid.

Thailand.—Southeast: Chanthaburi, Khao Soi Dao, Yuyen 232 (26 April 2006, CMU)

Distribution.—Cambodia and Laos

Habitat.—Primary, seasonal evergreen forest; 600–900 m elevation

Phenology.—Flowering April–May, Fruiting April–May

Notes.—The distinguishing feature of *G. repevensis* is the long cylindrical stigma which is as long as the ovary. The specific epithet refers to the type locality.

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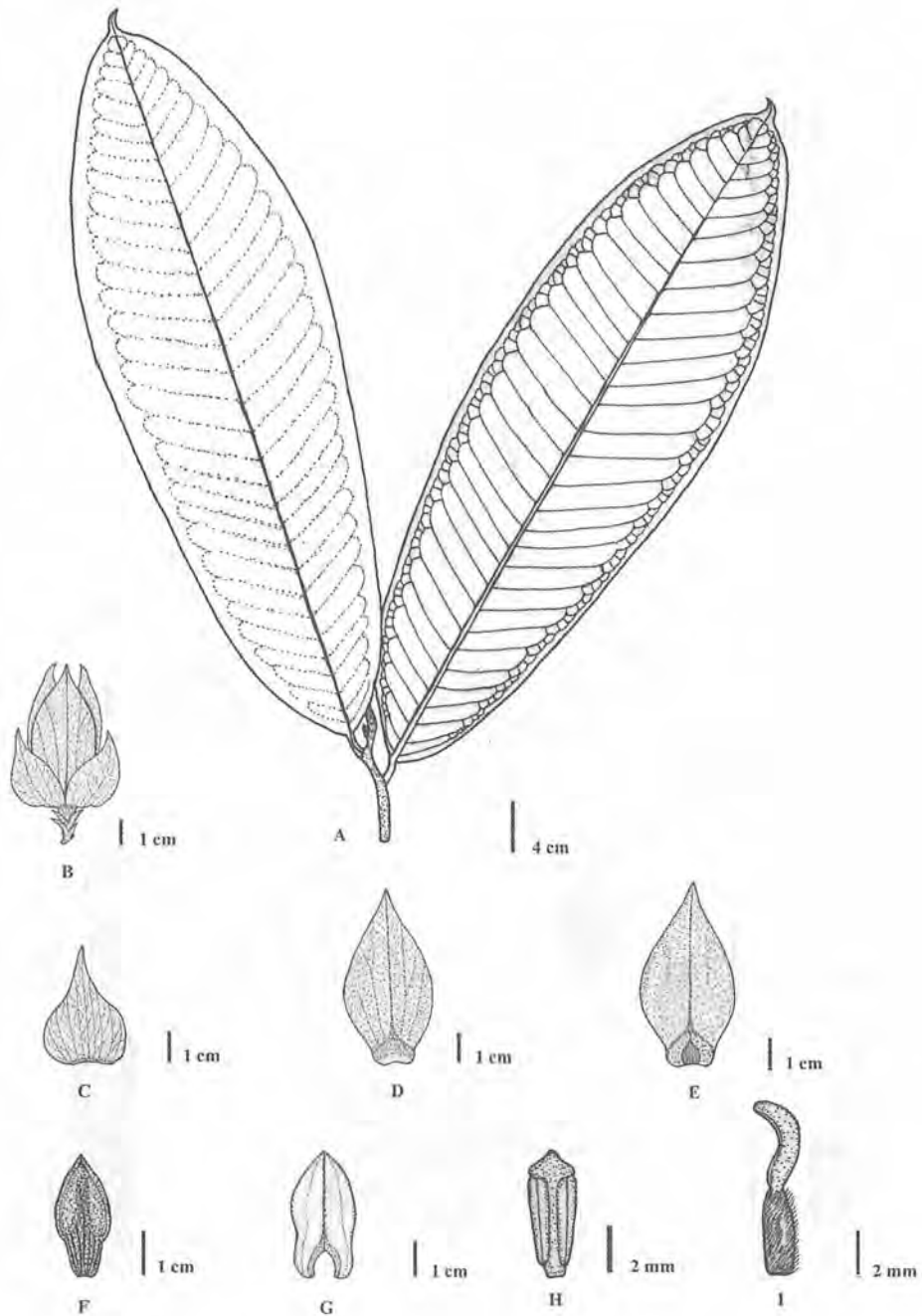


Figure 1. *Goniothalamus cheliensis* Hu. A, branch; B, flower; C, outside of sepal; D, outside of outer petal; E, inside of outer petal; F, inside of inner petal; G, connate inner petals; H, stamen; I, pistil (Yuyen 220). (Drawn by Y. Yuyen.)

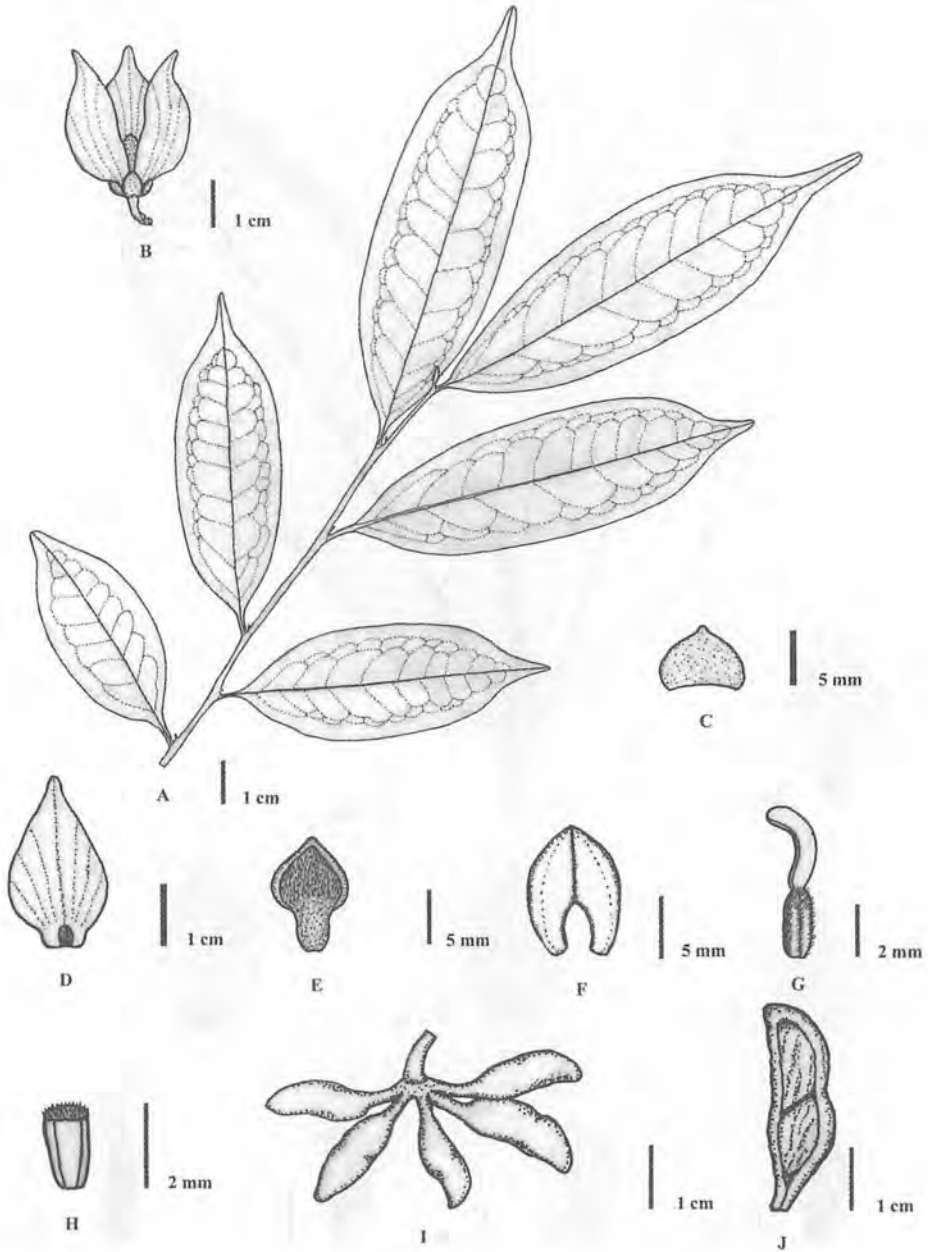


Figure 2. *Goniothalamus repevensis* Pierre ex Fin. & Gagnep. A, branch; B, flower; C, outside of sepal; D, inside of outer petal; E, inside of inner petal; F, connate inner petals; G, pistil; H, stamen; I, monocarps; J, monocarp, long. sect., showing 2 seeds (Yuyen 232). (Drawn by Y. Yuyen.)

REFERENCES

- AST, S. 1938. Annonacées. *Fl. Gén. de l'Indo-Chine Supplément*: 98.
- BYGRAVE, P. 1997. Provisional checklist of Thailand Annonaceae. Royal Botanic Gardens, Kew, U.K.: 8–9.
- CRAIB, W. G. 1925. *Florae Siamensis Enumeratio* I. The Siam Society, Bangkok, Thailand: 50–52.
- FINET, A. E., AND F. GAGNEPAIN. 1907. Annonacées. *Fl. Gén. de l'Indo-Chine* I: 89.
- HU, H. H. 1940. *Notulae systematicae an floram sinensem* X. *Bulletin of the Fan Memorial Institute of Biology* 10: 121–128.
- YUYEN, Y.; P. CHALERMGLIN, AND V. ANUSARNSUNTHORN. 2006. *Goniothalamus elegans* Ast (Annonaceae), a new record for Thailand. *Nat. Hist. Bull. Siam Soc.* 54(1): 157–158.

