

## A preliminary study of Gonystylaceae in Thailand

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**ABSTRACT.** Gonystylaceae is considered to be a rare plant family. One species, *Gonystylus confusus* Airy Shaw, is indigenous to Thailand. The species is found only in peat swamp forest and lowland dipterocarp forest: a few specimens have been collected in Narathiwat province.

Gonystylaceae is considered to be a rare plant family. One species, *Gonystylus confusus* Airy Shaw, is indigenous to Thailand and is found only in peat swamp forest and lowland dipterocarp forest. A few specimens have been collected in Narathiwat province and are described herein.

### GONYSTYLACEAE

Trees or shrubs. *Leaves* simple, alternate, exstipulate. *Inflorescence* usually paniculate. *Flowers* hermaphrodite, actinomorphic. *Calyx* 5-lobed, imbricate; petals small, numerous; anthers basifixd, 2-loculed, opening by longitudinal slits. *Ovary* 3–5-loculed. *Style* filiform. *Stigma* small, capitate. *Ovules* solitary in each locule, pendulous from near the apex. *Fruit* a capsule; seed large, without endosperm.

A monotypic family of about 30 species, from the Nicobar Is., through Malesia to the Solomon Is. and Fiji.

### GONYSTYLUS

Teysmann & Binnendijk, Bot. Zeit. 20 : 265. 1862; Ridl., Fl. Mal. Pen. 1: 321–323. 1922; Airy Shaw, Hook. Ic. Pl. 35. t.3474–3475. 1947; Kew Bull. 9–16. 1947; Kew Bull. 138–147. 1950; Fl. Mal. 4: 349. 1953; Whitmore, Tree Fl. Mal. 2: 387. 1973.

Trees or shrubs. *Leaves* alternate, chartaceous to coriaceous with translucent gland dots. *Inflorescence* paniculate, the main branches few, more or less elongate, the lateral branches short, consisting of extremely condensed, irregular, nodulose racemes, often reduced to fascicles. *Bracts* small, falling very early. *Flowers* long-pedicelled. *Calyx* thickly coriaceous, more or less cupular, imbricate or sub-valvate, calyx-teeth 5 slightly unequal (3 larger and 2 smaller), always hairy inside. *Petals* often joined at base, 7–40, deltoid or subulate. *Stamens* about equal in number to the petals, rarely twice as many; filaments very short and slender, free; anthers basifixd, broadly or

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narrowly oblong to obovate, 2-locular. *Ovary* sessile, globose, (2-)3-5(8)-locular; style filiform, elongate, wiry, glabrous or pubescent; stigma small, capitate. *Ovules* solitary in each cell, pendulous from the apex, anatropous. *Fruit* a capsule, with thick woody wall, splitting into 2-5 parts. *Seeds* large, arillate.

One species in Thailand.

**Gonostylus confusus** Airy Shaw, Kew Bull. 2: 10. 1947; Fl. Malesiana 4: 357. 1953; Whitmore, Tree Fl. Mal. 2: 191. 1973; Phengklai & Niyomdhham, Fl. peat swamp areas Narathiwat: 242. 1991. Type: Malaysia, Perak, Larut, *King's Collector* 3778 (holotype K, not seen). Figs. 1-3.

Tree up to 30 m tall, 220 cm girth; bark dark brown with elongate, adherent scales; inner bark fibrous, reddish to yellowish brown; sapwood white, soft; young part and inflorescence hairy. *Leaves* oblong-elliptic to oblanceolate-oblong, coriaceous, 6.5-23.5 cm long, 3.5-9 cm wide; apex cuspidate to abruptly short acuminate; base subcuneate to rounded, glabrous on both surfaces, sometimes with few, adpressed hairs near the midrib beneath; venation slender, parallel, conspicuous on both surfaces; petiole 1-2 cm. *Inflorescence* terminal, and in upper leaf axils, 5-20 cm long. *Flowers* small, ca. 6 mm across. *Calyx* 4-5-lobed, 5-6 mm long, 3-4 mm wide, tomentose outside. *Petals* ca. 30, subulate-filiform 3-4 mm long, joined at the very base. *Ovary* hairy, (2-)3(-4)-loculed. *Fruit* globose-ellipsoid, ellipsoid to ovoid, sitting on the remaining calyx, scurfy, rusty brown, splitting into 2-3(-4) parts, 4-6 cm long, 2.5-3.5 cm across, (1-)2-3-seeded, globose-ellipsoid to oblong, 2.8-4 cm long, 2.3-3.5 across; aril creamy white.

Thailand.— PENINSULAR: Narathiwat [Su Ngai Pa Di, Pa Wai, 11 Sept. 1985, C. Niyomdhham *et al.* 960 (BKF); Waeng, Sirindhorn Waterfall, 20 Sept. 2001, C. Niyomdhham *et al.* 6569 (BKF); 18 June 2003, M. Tarumatsawat 03-3 (BKF); Su Ngai Ko Lok, Toh Daeng canal, 25 July 2000, T. Noo-Yim *et al.* 00-36 (BKF); 22 June 2002, T. Noo-Yim *et al.* 02-2 (BKF); 17 June 2003, M. Tarumatsawat 03-1 (BKF); Su Ngai Ko Lok, Ban Pa Ye, rubber tree plantation, 17 June 2003, M. Tarumatsawat 03-2 (BKF)].

Distribution.— Malay Peninsula and Indonesia (North Sumatra).

Ecology.— Peat swamp and evergreen low land dipterocarp forests, up to 600 m altitude. Flowering August–November. Fruiting June–September.

Vernacular.— Tan yong phru (ตันหยงพรุ), Tam yao (ต้าหยา)

Note.— The authors have not seen type specimens of this species. However the materials available match the description in Airy Shaw (1947) very well.

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Figure 1. *Gonystylus confusus* Airy Shaw. A. Trunk and leaves. Slash, showing fibrous, reddish to yellowish brown inner bark (Photographed by M. Tarumatsawat); B. Flowering twig; C. Fruiting twigs; D. Fruits and seeds (Photographed by C. Niyomdham).