

A new species of *Abutilon* (Malvaceae-Malvoideae) from Thailand

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ABSTRACT

A new species, *Abutilon substellatum* Phuph. & Poopath, is described and contrasted to its nearest ally, *A. persicum* (Burm.f.) Merr.

KEYWORDS: Malvaceae, Malvoideae, *Abutilon substellatum*, new species, Thailand

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INTRODUCTION

The present paper is a by-product of the first author's work on Malvaceae-Malvoideae for the Flora of Thailand. The genus *Abutilon* Mill. comprises approximately 160 species in the tropics and subtropics (Mabberley, 2008), mostly in the New World. Previously five indigenous species were recognized in Thailand (Pooma & Suddee, 2014).

In March 2013, during our fieldwork in Tham Pathun Non-hunting Area, Uthai Thani Province, we found a specimen of *Abutilon* that was most similar to *A. persicum* (Burm.f.) Merr., but had distinctive 3–4 mm long star-shaped fruits with 6–7 mericarps (similar to star anise (*Illicium verum* Hook.f. - Schisandraceae) fruits). It was proven that this is a new species, here described as *Abutilon substellatum* Phuph. & Poopath. This new species is the sixth indigenous species of *Abutilon* found in Thailand.

Abutilon substellatum Phuph. & Poopath, sp. nov.

Allied to *A. persicum* (Burm.f.) Merr., but differs in staminal tube 4.5–6 mm long (vs 3–4 mm long); staminal filaments 2–3 mm long (vs 15–25 mm long); style-branches 6–8 (vs 5); star-shaped fruits with 6–7 mericarps (vs cup-shaped fruits with 5 mericarps); seed covered with erect simple hair (vs glabrous) (See Table 1). Type: Thailand, Uthai

Thani, Tham Pathun Non-hunting Area, alt. 500 m, 3 Mar. 2013, *Poopath et al.* 505 (holotype **BKF!**). Figs. 1–2.

Small shrub, 30–150 cm tall, trunk and branches softly, minutely stellate hairy. *Leaves* thin, membranous, broadly ovate to suborbicular, 3.5–12.5 × 3.5–10 cm, apex acute, acuminate or rounded; base shallowly cordate or truncate; margins irregularly crenate-dentate or serrate; basal nerves 5–9, lateral nerves 2–3 on each side of midrib, veinlets inconspicuous; upper surface green, minutely stellate hairy, lower surface pale green, densely minutely stellate hairy; petiole 4–14 cm long, slender. *Stipules* filiform, 3–5 mm long, densely minutely stellate hairy, caducous. *Flowers* axillary, solitary; pedicel 3–4 cm long, slender, articulation near apex, dense stiff patent hairs near apex and below the articulation; epicalyx absent. *Calyx* pale green, campanulate, 10–13 mm diam., 4–7 mm long, tube with stiff patent hairs, 5-lobed, lobes ovate, 3–6 × 2.5–4 mm, apex acuminate; outside densely minutely stellate hairy, inside, simple hairy. *Petals* 5, connate near base, yellow with white at the base and with greenish veins; 3–3.5 cm diam., obovate or oblong-obovate, 12–16 × 10–13 mm, apex rounded, truncate or mucronate, slightly reflexed, densely stellate hairy near base. *Staminal tube* 4.5–6 mm long; base conical, 1.5–2 mm long and 3 mm diam., white, densely stellate hairy; upper tube slender, 3–4 mm long and 0.6 mm diam., white, glabrous; staminal filaments 2–3 mm

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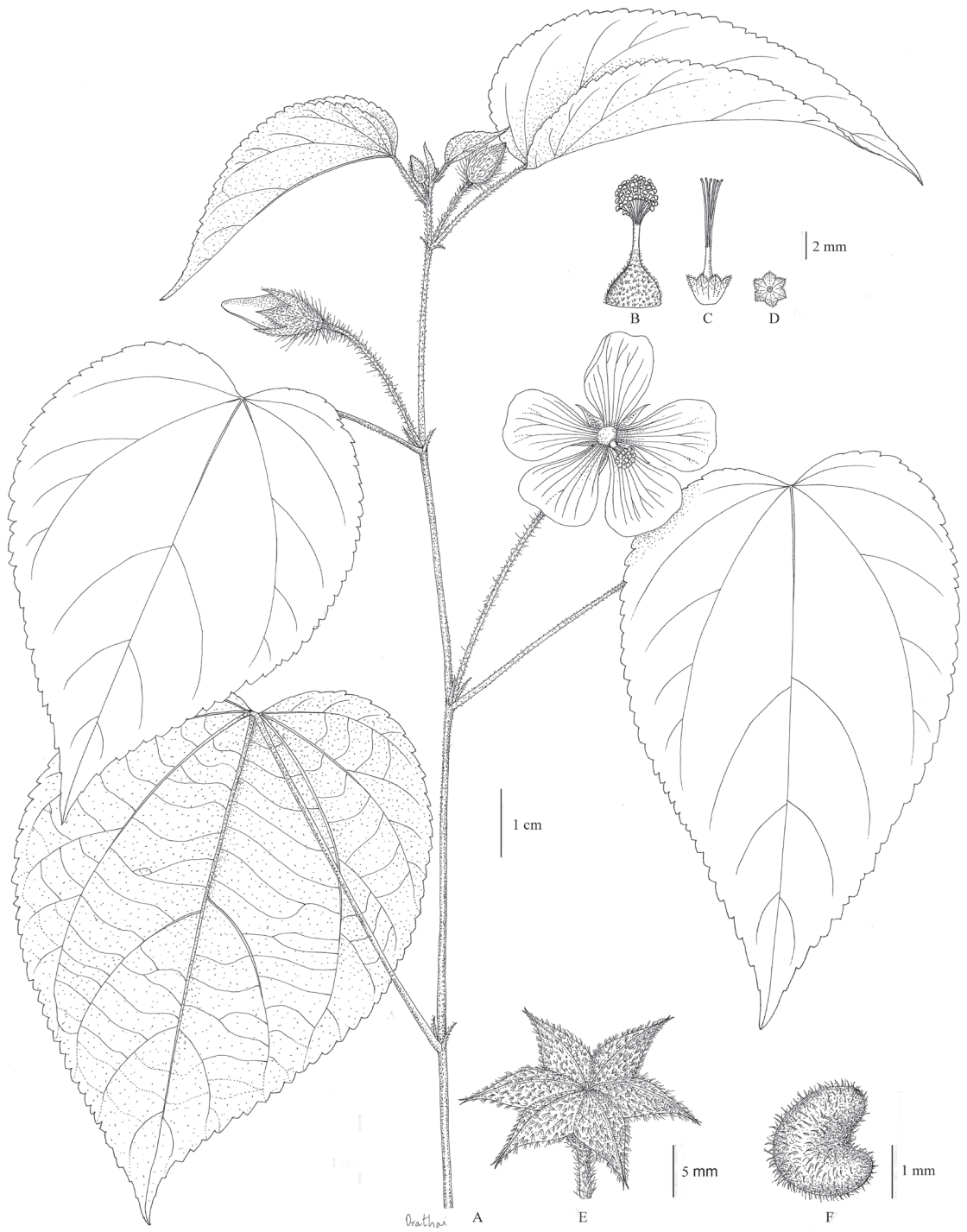


Figure 1. *Abutilon substellatum* Phuph. & Poopath: A. habit; B. stamen; C. pistil; D. top view of ovary; E. fruit; F. seed. Drawn by Orathai Kerdkhao.

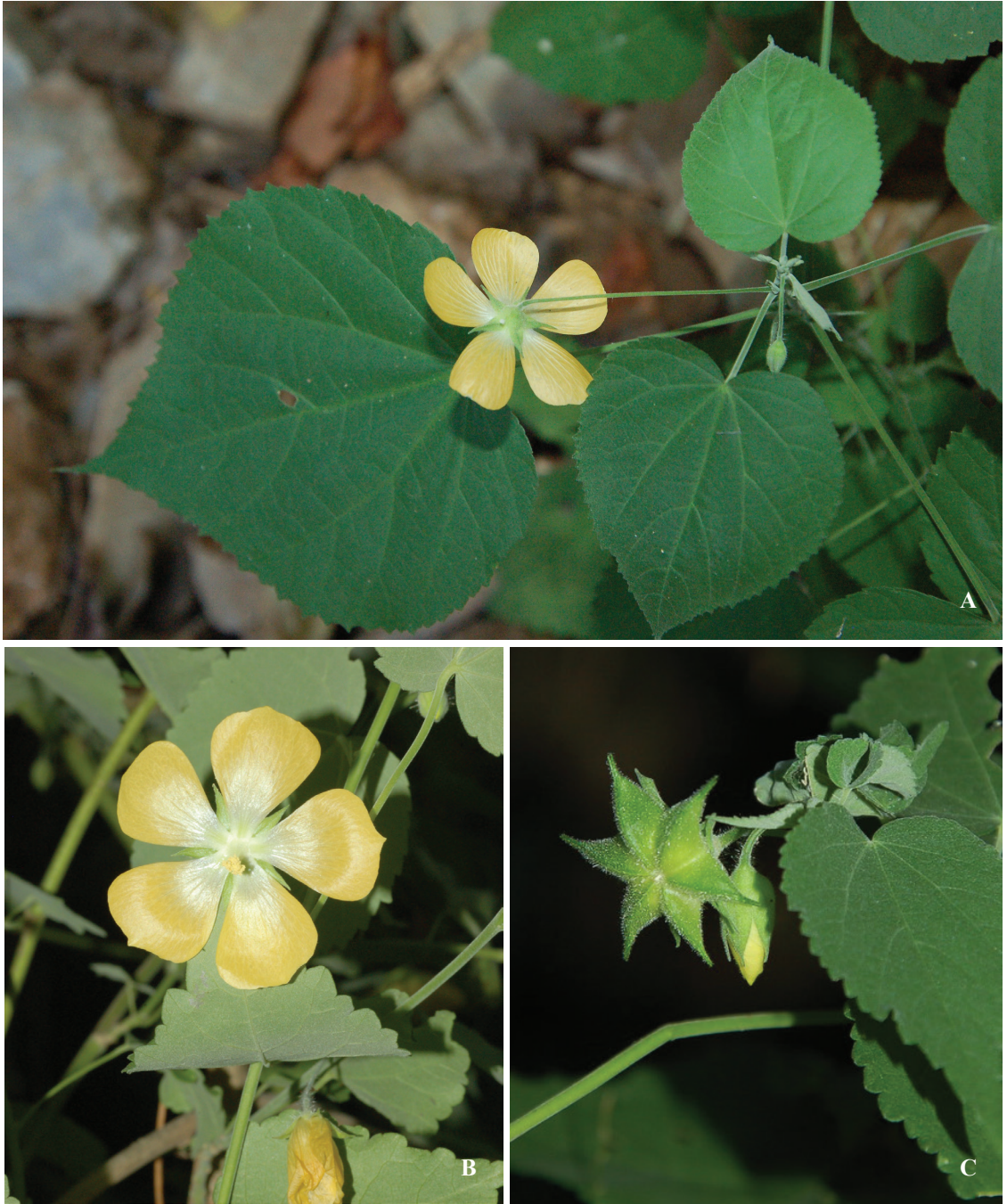


Figure 2. *Abutilon substellatum* Phuph. & Poopath : A. habit; B. flower; C. fruit. Photos by M. Poopath.

Table 1. Morphological differences between *Abutilon substellatum* and *A. persicum*

Characters	<i>A. substellatum</i>	<i>A. persicum</i> *
Habit	small shrub 0.3–1.5 m tall	shrub 2–3 m tall
Stipules	3–5 mm long, filiform	2 mm long, linear to subulate
Calyx-lobes	3–6 × 2.5–4 mm, ovate	6–10 × 3–5 mm, ovate to lanceolate
Calyx	4–7 mm long, 10–13 mm diam.	5–13 mm long, 13–20 mm diam.
Corolla	ca 3 cm diam., yellow, white at the base	3–6 cm diam., yellow, usually reddish brown at the base
Staminal tube	4.5–6 mm long	3–4 mm long
Staminal filament	2–3 mm long	15–25 mm long
Ovary	cup-shaped with 6–8 acute lobes toward apex, 6–8-loculed	cylindrical, 5-loculed
Style-branches	6–8	5
Fruit	star-shaped, 3–4 mm long and 1.5–2.2 cm diam., 6–7 mericarps	cup-shaped to cylindric-shaped, 15–20 mm long and 1.5 cm diam., 5 mericarps
Seed	1–3 per mericarp, reniform, ca 2.2 × 2 mm, brown, with simple erect hairs	4–6 per mericarp, reniform, ca 3 × 2.5 mm, black, minutely white punctate, glabrous

* some morphological data of *Abutilon persicum* (Burm.f.) Merr., from Sivarajan & Pradeep (1996)

long, white, glabrous; anthers ca 50, reniform, ca 0.25 × 0.3 mm, pale yellow, glabrous. *Ovary* cup-shaped with 6–8 acute lobes toward apex, ca 2 mm long and ca 2 mm diam., densely stellate hairy toward apex, 6–8-loculed, greenish; style ca 3 mm long, glabrous, branches 6–8, equal in length, 5–6 mm long, greenish; stigmas densely papillose; ovules 3 in each locule. *Fruit* a schizocarp, star-shaped, 1.5–2.2 cm diam., 3–4 mm long; mericarps 6–7, a rib along the middle of each locule, outside densely stellate hairy, inside glabrous; apex of each locule with a spiny appendage, tip of the appendage divided into two; dehiscing from apex along ribs towards base. *Seeds* 1–3 in each locule, reniform, ca 2.2 × 2 mm, brown, covered with simple erect hairs.

Thailand.— SOUTH-WESTERN: Uthai Thani [Khao Pla Ra, Tham Pathun Non-hunting Area, alt. 500 m, 3 Mar. 2013, *Poopath et al.* 505 (BKF); *ibid.*, alt. 500 m, 13 Jan. 2016, *Phoemphun et al.* s.n. (BKF)].

Distribution.— Endemic to Thailand, known only from the type locality.

Ecology.— Slightly shady areas, mixed deciduous forest or edge of dry evergreen forest on limestone, 100–500 m alt.

Phenology.— Flowering and fruiting: January–March.

Vernacular.— Kong khao dao (ก่องข้าวดาว).

Etymology.— The specific epithet refers to the star-shaped fruits.

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