

**BAUHINIA SIAMENSIS (LEGUMINOSAE–CAESALPINIOIDEAE),
AN EXTRAORDINARY NEW SPECIES FROM THAILAND**

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ABSTRACT

Bauhinia siamensis sp. nov. from Phitsanulok Province, Thailand, is described and illustrated. A description of the pollen morphology is included.

Key words: Flora of Thailand, new species, systematics, pollen, *Bauhinia*, Leguminosae-Caesalpinioideae.

INTRODUCTION

During a recent visit to the Forest Herbarium (BKF), Bangkok, Mr. Thawatchai Wongprasert, a senior botanist, gave the authors a collection of *Bauhinia* from central northern Thailand. To our astonishment this collection represented a new species remarkably different from anything else that we have seen from Southeast Asia. It is all the more astonishing as several collectors, including the first author, have worked in the area for a number of years without coming across any material of this species. This shows that many provinces in Thailand are still undercollected and that more field work should be given high priority. Mr. Wongprasert, who collected the plant, also took fine colour slides of the specimens *in situ*.

The most remarkable characters of this new species are the pendulous, elongate raceme up to 75 cm long with pink flowers 3–4 cm in diameter and the calyx which splits during anthesis into a bilabiate structure. These characters have not been found before in any Asian species of *Bauhinia*.

Bauhinia siamensis K. & S. S. Larsen *sp. nov.*

Diagnosis: *Bauhinia siamensis* K. & S. S. Larsen sp. nov. subgeneris *Phanerae* (Lour.) Kurz sectionis *Phanerae* (Lour.) Wunderlin, Larsen & Larsen, a speciebus ceteris omnibus sectionis differt inflorescentia pendula ad c. 75 cm longa, calyce bilabiate findenti.

Type: Th. Wongprasert 012–01, Thailand, Phitsanulok Province, Chartrakarn District, north of Ban Dong Forest Protection Station, alt. c. 300 m. near a stream, granitic soil on slope in mixed deciduous forest, rich with bamboo. 2. 2. 2001 (holotype, BKF, isotypes, AAU, E, K, L and MO). Colour slides (AAU & BKF).

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Description.—Tendrilled liana; very young branches reddish-brown hairy, soon glabrous. *Leaves:* stipules rotundate to obovate with truncate base, 6–9 mm long, finely puberulous outside, pubescent inside; petioles glabrescent, 1–3 cm long, thickened at both ends; lamina chartaceous, ± ovate, 4–7.5 by 4–7 cm, apex bifid by 1/3 to 2/5, sinus broad, tips of lobes rounded, base cordate, nerves 7–9, hairy on both sides when very young, later glabrous on the upper surface, lower surface puberulous mainly on the nerves and at the base. *Inflorescence* a pendulous, elongate raceme up to 75 cm long, with closely spaced or distant stipules at the base; axis reddish-brown pubescent when young, later subglabrous; bracts lanceolate, 10–12 by 3–4 mm, inside pubescent outside puberulous; pedicels 18–25 mm, pubescent; bracteoles linear, 4–5 mm long, hairy as the bracts, ± opposite, inserted around the middle of the pedicel. *Buds* oblong, finely reddish-brown pubescent, 10–11 by 5–6 mm, apex pointed with 5 minute, free calyx teeth. *Hypanthium* obliquely cup-shaped, striate when dry, 5–6 by 4–5 mm, hairy as the buds. *Calyx* splitting into a bilabiate structure at anthesis, finely hairy inside, denser towards apex, upper segment of 2 sepals, lower segment of 3 sepals. *Petals* 5, pink, subequal, obovate to elliptic, apex rounded, base attenuate, 15–19 by 8–10 mm, claw 1–2 mm long, upper surface glabrous except at base, lower puberulous along the nerves and at base; a column-like structure (persistent in pod) protruding from the posterior side of the mouth of the hypanthium, 3–4 by 2.5–3 mm, apex 3-partite, dorsal side with 2 ridges, ventral side with 2 lateral ridges and a low middle ridge. *Stamens:* 3 fertile, filaments glabrous, 13–15 mm long, anthers glabrous, oblong, 3–4 by 1–2 mm, dehiscing longitudinally; staminodes 6: 4 posterior inserted at the base of the column, 2 middle ones, 5–6 mm long with minute apical appendages and 2 lateral, minute, 1–2 mm long, 2 minute between the fertile ones, 1–2 mm long. *Ovary* stipitate, stipe c. 4 mm long, glabrous towards the base; ovary densely appressed golden-hairy, 7–10 mm long; style short, c. 1 mm long, glabrous in upper part; stigma punctate-capitate, c. 1 mm broad, sparsely golden-hairy. *Pod* dehiscent, glabrous, dark brown, narrowly oblong, 16–18 by 3–4 cm, with a 6 mm long stalk and beak c. 5 mm. *Seeds* dark brown, flat, ovate, 15–20 mm long. Funicle forked near the hilum into 2 thin branches running almost all the way along the edge of the seed.

Pollen data.—Pollen from several specimens from the type locality including the isotype, in AAU was studied. Methods and terminology follow Larsen & Larsen (1997). *Pollen grain* large, polar axis (P) = (53–) 56–60 (–61) μm, equatorial axis (E) = 36–43 μm; 3-colporate, prolate, P/E = 1.39–1.62, oblong in meridional limb. Amb trilobate. Apocolpia narrow, 15–18 μm. Ectoaperture: colpate, 38–44 μm long, 5–6 μm broad, slightly invaginate; apices acute, subacute, rounded or irregular; colpus membrane with small processes (Fig. 3C). Endoaperture: ora ± circular, 4–6 μm. *Exine* 1.5–2.0 μm, thicker at margin of the colpus and at apocolpia, consisting of sexine (tectum (t) and collumellae (c)), and nexine (n) (Fig. 3F). *Sexine* as thick as nexine. *Nexine* slightly thicker at the ectoaperture. *Tectum* rugulose at mesocolpia with minute pits and creeks between the ridges (Fig. 3E) changing gradually from rugulose to punctate towards apocolpia (Fig. 3D). Pollen of this new species belongs to the ridleyi pollen type (S. S. LARSEN, 1975).

Distribution and habitat.—So far this species is known only from the type locality. It is found scattered in open, deciduous forest with bamboo thicket near a stream on granite bedrock.



Figure 1. *Bauhinia siamensis*. Left, Inflorescence; upper right, flowers; lower middle, base of inflorescence showing stipules; lower right, young pods. Photos by T. Wongprasert, from type locality.

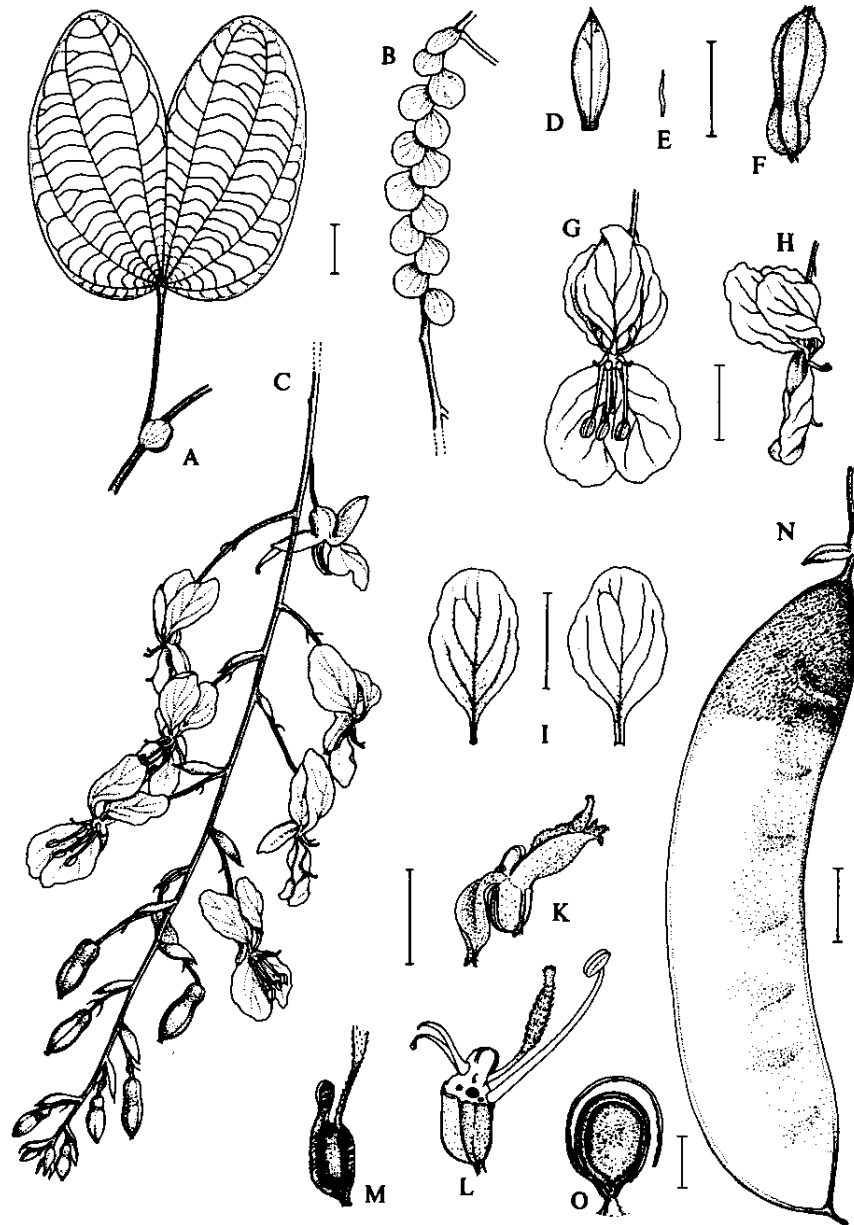


Figure 2. *Bauhinia siamensis*. A, leaf; B, base of inflorescence with stipules; C, distal part of inflorescence; D-E, bract and bracteole; F, bud; G-H, flower front and side view; I, petal, lower and upper surface; K, flower at anthesis showing calyx; L, flower after anthesis with sepals and petals removed, showing pistil and the column-like structure; M, longitudinal section of hypanthium; N, pod; O, seed with funicle. Scale bar = 1 cm (A-M and O), 2 cm (N). Drawing from isotype and slides.

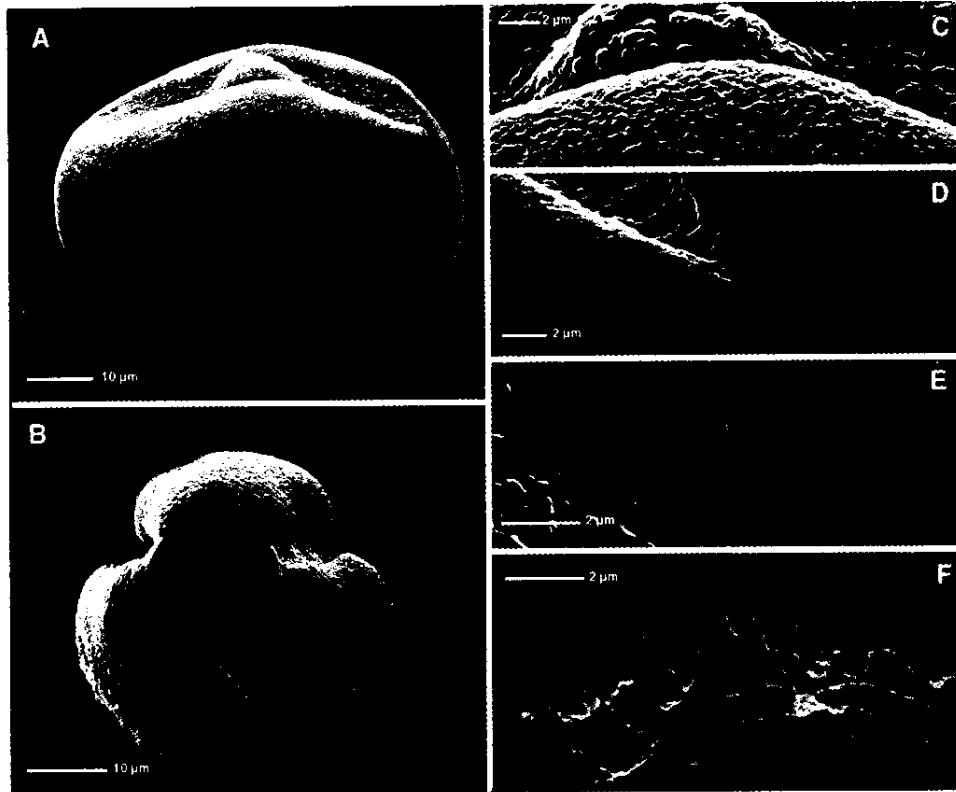


Figure 3. *Bauhinia siamensis*. SEM micrographs of pollen grains. A, C–E, non-acetolysed; D–F, acetolysed. A, B, whole pollen grain in equatorial and polar view; C, margin of aperture showing tectum and colpus membrane; D, detail of tectum at apocolpium; E, tectum at mesocolpium; F, fracture showing exine stratification (From isotype in AAU).

Vernacular.—The local name is sio daeng (สี่ขวานแดง). However, “sio” has also been used for other, mainly tree species of *Bauhinia*, e.g. *B. variegata*. Therefore we propose the vernacular name: soi siam (สร้อยสยาม) for this beautiful species. “Soi” is Thai for necklace, referring to the pendulous inflorescences.

Affinities.—Unique as this new species of *Bauhinia* is, it is closely related, both in general morphology and pollen type, to *B. ridleyi* Prain and *B. ferruginea* Roxb., in subsection *Clavatae*. It differs from the other species in this group by the long, pendulous inflorescence and by the splitting of the calyx into a bilabiate structure. The remarkable outgrowth from the hypanthium mouth has not been found in other species in this group, although it has been observed in *B. bracteata* (Grah. ex Benth.) Baker which belongs to subsection *Fulvae*. No other species of *Bauhinia* have such a structure. Further studies may well lead to the establishment of a new taxonomic grouping for *B. siamensis*.

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