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A new species record of *Argostemma* (Rubiaceae) for Thailand

KITICHATE SRIDITH

ABSTRACT. A new species record for *Argostemma* Wall. (Rubiaceae) in Thailand was discovered during a taxonomic revision of the genus for the Malay Peninsula (including the most southern part of Peninsular Thailand).

KEY WORDS: new record, *Argostemma*, Rubiaceae, Thailand.

INTRODUCTION

The genus *Argostemma* Wall. (Rubiaceae) is distributed widely in tropical and sub-tropical Asia with two disjunct species in eastern Africa, although, most taxa are confined to SE Asia (Sridith and Puff, 2000). In Thailand, Craib (1880) produced a list of species and their the localities, and recorded 41 taxa occurring throughout the country. More recently, the genus has been revised for Thailand, with 31 taxa recorded (Sridith, 1999b). New information based on the most recent taxonomic revision (Sridith, 1999a) has been taken into account during the taxonomic revision of the genus for the Malay Peninsula (including the southern part of Peninsular Thailand). In this latest treatment (unpubl. data), unseen specimens including types from the herbaria of the Royal Botanic Gardens, Kew (K) and the National Herbarium of the Netherlands, Leiden University-branch (L) together with new collections from Phangnga, Peninsular Thailand indicated that there is a new species record for Thailand: *Argostemma kurzii* C.B.Clarke.

DESCRIPTION

Argostemma kurzii C.B.Clarke in Hook.f., Fl. Brit. Ind. 3: 43. 1880. Type: Burma (Myanmar), Moulmein, *Parish* 62 (holotype **K!**). Fig. 1.

Perennial herbs, attached to the substrate with dense, much-branched matted roots. *Stems* erect, unbranched, 3–15 cm long, glabrous. *Leaves* opposite, in 1 or (rarely) 2 pairs (then always a solitary leaf several times larger than the others and internodes between leaf pairs very short, i.e. pseudoverticillate), strongly anisophyllous, leaf blades membranaceous, ovate, attenuate, base round or subcordate, apex acute or acuminate, large leaf (leaves) 50–160 by 50–150 mm, small leaf (leaves) (4–)10–17(–25) by 1–5(–14) mm, midrib with several pairs of ascending lateral veins both prominent and raised below, glabrous on both surfaces, petioles 1–4 mm or subobsolete; *stipule* oblong or elliptic-ovate, ca 1 by 2–5 mm long, glabrous. *Inflorescence* terminal, umbel-like, 1–4 inflorescence(s) per each plant, 4–19(–24)-flowered, peduncles 40–120 mm long,

[1] PSU-Herbarium, Department of Biology, Faculty of Science, Prince of Songkla University, Hat Yai, Songkhla 90112, Thailand.

glabrous; bracts 4 or 5, of unequal size, fused basally and forming a cup-like involucrum, oblong or ovate, apex round or acute, 3–5 by 2–3.5 mm, green, venation inconspicuous, glabrous; pedicels 5–10 mm long, entirely glabrous. *Flowers* 5-merous, actinomorphic. *Calyx* persistent, chartaceous, green; calyx tube very short; calyx lobes triangular, ca 1 by 1 mm, erect, venation inconspicuous, glabrous. *Corolla* white, star-shaped, glabrous; corolla tube very short, 1.5–2 by 2.5–3 mm; corolla lobes, triangular, 2–2.5 by 1.5 mm, spreading, venation conspicuous. *Stamens* 5, free, inserted at the base of the corolla tube, filaments 0.4–0.6 mm long, slender; anthers connivent into a cone-like structure, yellow, subbasifixed, oblong, ca 1 mm long, opening by apical pores. *Ovary* 2–locular, globose, ca 1 by 1 mm, glabrous; style filiform, 2.5–5 mm long, long-exserted above (2–4 mm) the stamens, glabrous; stigma capitate. *Fruit* capsular, globose, 1.5–2 by 1.5–2 mm, glabrous, crowned by a persistent calyx, opening by an apical operculum. *Seeds* numerous.

Thailand.— NORTHERN: Lampang [Doi Khun Tan National Park, *Maxwell* 94-816 (**L**)]; SOUTH-WESTERN: Kanchanaburi [Kwae Noi River basin, Linthin near Sai Yok, *Kostermans* 1407 (**L**), Sangkhlaburi, Thung Yai Naresuan Wildlife Sanctuary, Ban Sa-ne Pong, *Maxwell* 93-903 (**L**)]; PENINSULAR: Phangnga [Wat Prachum-yodhi (a monastery), Mueng Phangnga district, *Sridith et al*. 998 (**PSU**)].

Distribution.— Myanmar (Moulmein).

Ecology.— On wet limestone in mixed deciduous forest in shaded areas, 200–400 m altitude. Flowering July to August. Fruiting July to August.

Critical notes.— The mode of anther dehiscence in the original description (Clarke, 1880) was misleading. It stated that the anthers of this species dehisce by their whole length, indicating that they open by means of a longitudinal slit. The anthers do, in fact, open by means of apical pore. When considering the vegetative characters, the specimens from Kanchanaburi and Phangnga provinces have noticeable broad cordate leaves with distinctly (very) short petioles (subobsolete), while those from Lampang resemble the type specimen (sessile). It is assumed here that the different leaf shapes, i.e. elliptic vs. cordate; short/subobsolete petiole vs. sessile petiole, represent within-species variation. Similar levels of variation are found in many other *Argostemma* species. Conversely, their floral characters are not that variable.

This new species record differs from the other *Argostemma* species in Thailand, which have opposite leaves in one or (rarely) 2 pairs (then always a solitary leaf several times larger than the others, internodes between leaf pairs very short, i.e. pseudoverticillate) and are strongly anisophyllous with star-shaped flowers by having free stamens, and each flower with a long-exserted style (2–4 mm) (compared with flowers having anthers coherent and forming an anther-cone, and style barely exerted, < 1 mm).

Concerning the distribution range, the species in question occurs on both sides of the Tenasserim Range (West side of Tenasserim in Moulmein [*Parish* 62 (**K**)], Myanmar; East side of Tenasserim in Kanchanaburi [*Kostermans* 1407, *Maxwell* 93-903 (**L**)] and Tak?, Thailand) and continuing along the eastern branch of the Tenasserim Range to Northern Thailand (in Lampang [*Maxwell* 94-816 (**L**)], possibly continuing to Chiang Mai, Nan, Phitsanulok and Phetchabun). The southernmost range of this species might be in the locality of the most recent collection in Phangnga province, Peninsular Thailand. More populations from other localities of the same habitats in Northern Thailand should be expected, possibly displaying more variation in leaf shape.

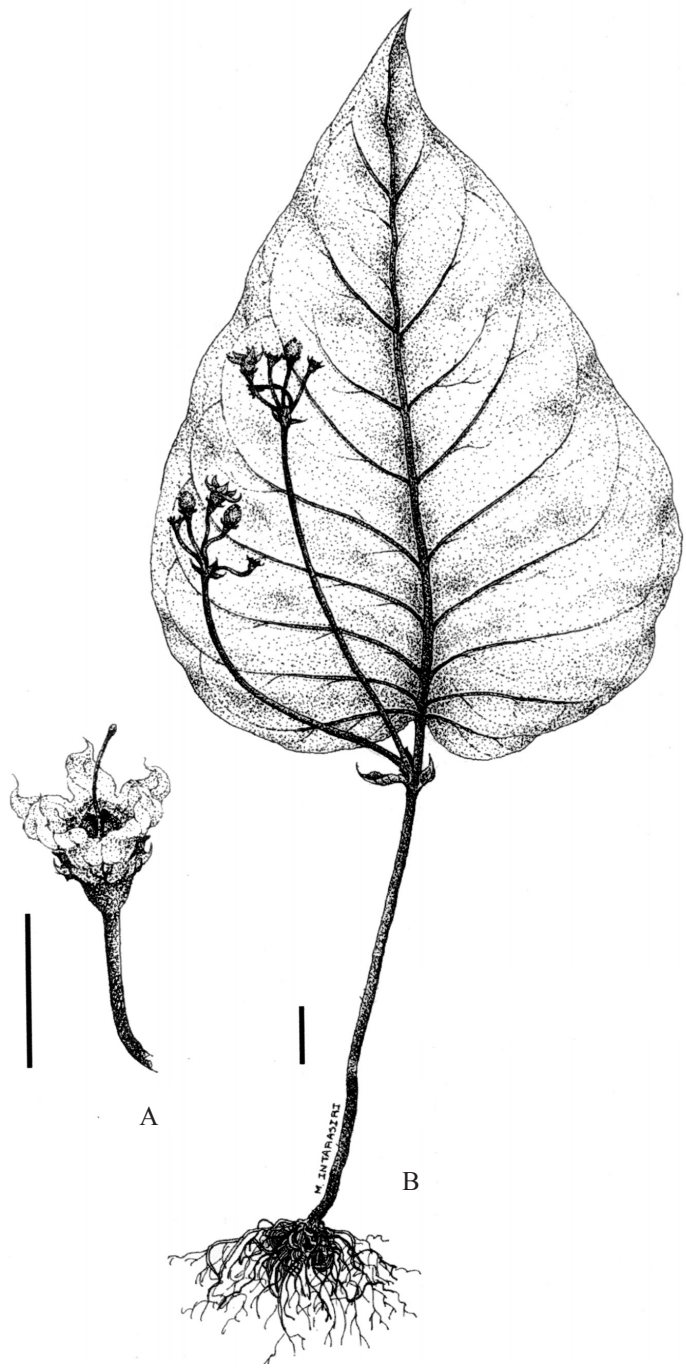

Figure 1. *Argostemma kurzii* C.B.Clarke: A. flower; B: habit. (Scale bars = 1 cm), all from *Maxwell* 93-903. Drawn by Monraj Intarasiri.

A key is presented below to the taxa of *Argostemma* Wall. (Rubiaceae) from Thailand which have leaves opposite, in one or (rarely) 2 pairs (then always a solitary leaf several times larger than the others and internodes between leaf pairs very short, i.e. pseudoverticillate) and are strongly anisophyllous with star-shaped flowers (modified from Sridith, 1999b). The use of *A. siamense* Puff as a nomen novum for *A. monophyllum* Sridith follows Puff (2009).

KEY TO *ARGOSTEMMA KURZII* AND CLOSELY RELATED SPECIES

1. Flowers star-shaped with anthers coherent ; style as long as or slightly longer than stamens (ca 0.5–1 mm longer than stamens)
   2. Leaves broadly ovate; stamens basifixed; style as long as or slightly longer than anther cone (exerted for < 0.5 mm) (Peninsular Thailand) **A. unifolioides** King
   2. Leaves ± elliptic; stamen semi-medifixed; style much longer than anther cone (exerted for ca 1 mm) (Northeastern, Eastern, Southeastern and Central Thailand) **A. siamense** Puff
1. Flowers star-shaped with free stamens; style much longer than stamens (exerted for ca 5 mm) **A. kurzii** C.B.Clarke

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