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Wrightia calcicola (Apocynaceae: Apocynoideae), a new species from Thailand

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Fourteen species of *Wrightia* have previously been recorded from Thailand (see Middleton, 2010) which is around half of the known species in the genus (Ngan, 1965; Middleton, 2005, 2007, 2010). The existing sectional arrangement (Ngan, 1965) is in need of examination and current data suggests it is unlikely to stand closer scrutiny (Livshultz et al., 2007; Middleton, 2010).

Plant collecting in previously unexplored or under-explored areas of South-East Asia has led to the description of several additional *Wrightia* species in recent years (Middleton 2005, 2007, 2010; Middleton & Santisuk, 2001). Many of these taxa are local endemics from karst limestone habitats and several are threatened due to quarrying for cement (Clements et al., 2006) and habitat degradation through increased recreational use of National Parks.

During routine naming of Apocynaceae specimens in the herbarium of the Queen Sirikit Botanic Garden (QBG) a number collections were found that belong to an as yet unnamed species of *Wrightia*. This is described here. A conservation assessment is provided following the guidelines and procedures of the IUCN (2001) and IUCN Standards and Petitions Working Group (2010)

Wrightia calcicola D.J.Middleton, **sp. nov.**

Differs from *Wrightia sikkimensis* in the yellow corolla colour and the deeply lobed antepetalous corona lobes and from *Wrightia karaketii* in the yellow corolla colour and in having quite distinct and narrow antepetalous and alternipetalous corona lobes. – Type: Thailand, Nan Province, Amphoe Song Kwae, Tambon Yod, Tham Sakoen National Park, 800 m alt., 9 February 2011, *W. La-ongsri & N. Romkham 1334* (holotype **QBG**; isotype **E**). Figs. 1, 2.

Shrub or small tree to 20 m tall, with white latex; branchlets green, puberulent, glabrescent with age, older branches reddish brown with pale round lenticels. Leaves opposite; petioles 0.3–0.5 cm long blade elliptic to slightly obovate, 3.2–13 × 1.4–5 cm, 2.2–3.4 times as long as wide, base cuneate to obtuse, apex acuminate to caudate; midrib slightly sunken above, slightly prominent beneath, secondary veins slightly prominent above and beneath, 7–13 pairs of secondary veins, tertiary venation reticulate; sparsely puberulent on midrib and venation above and beneath. *Inflorescence* terminal, 10–18-flowered, 2.5–4.5 cm long, all axes with sparse to sense curved hairs; peduncle 0.6–1.1 cm long; lowermost bracts like small leaves, all other bracts narrowly elliptic or linear, 2–8 mm long; pedicels 7–10 mm long. *Calyx* lobes ovate to elliptic, 3–4.1 × 1.7–2 mm, apex acute, quite variable in size even within a single flower; 5 more or less ovate colleters on inside of calyx, 1–1.3× 0.5–0.6 mm, sometimes with an additional side lobe on some of them, apex acute or slightly notched. *Corolla* rotate, yellow to greenish yellow, aestivation sinistrose; tube ca 1.2 mm long, widening at 1 mm, glabrous outside and inside; lobes spreading, elliptic, c.8.5 × 3.5 mm, apex bluntly acute to rounded, minutely and densely pubescent outside and inside. *Corona* of two whorls: antepetalous and alternipetalous; antepetalous lobes adnate to corolla lobes for much of length, slightly obovate, c.4 mm long, c.1.9 mm wide, apex acuminate or more often divided at apex into 2–5 lobes for 0.5–1.2 mm, glabrous; alternipetalous lobes free, oblong, c.2 mm long, 0.9–1 mm wide, notched to slightly bifid at apex, glabrous. *Stamens* inserted where tube widens, attached in a ring to the; filaments c.1.2 mm long,

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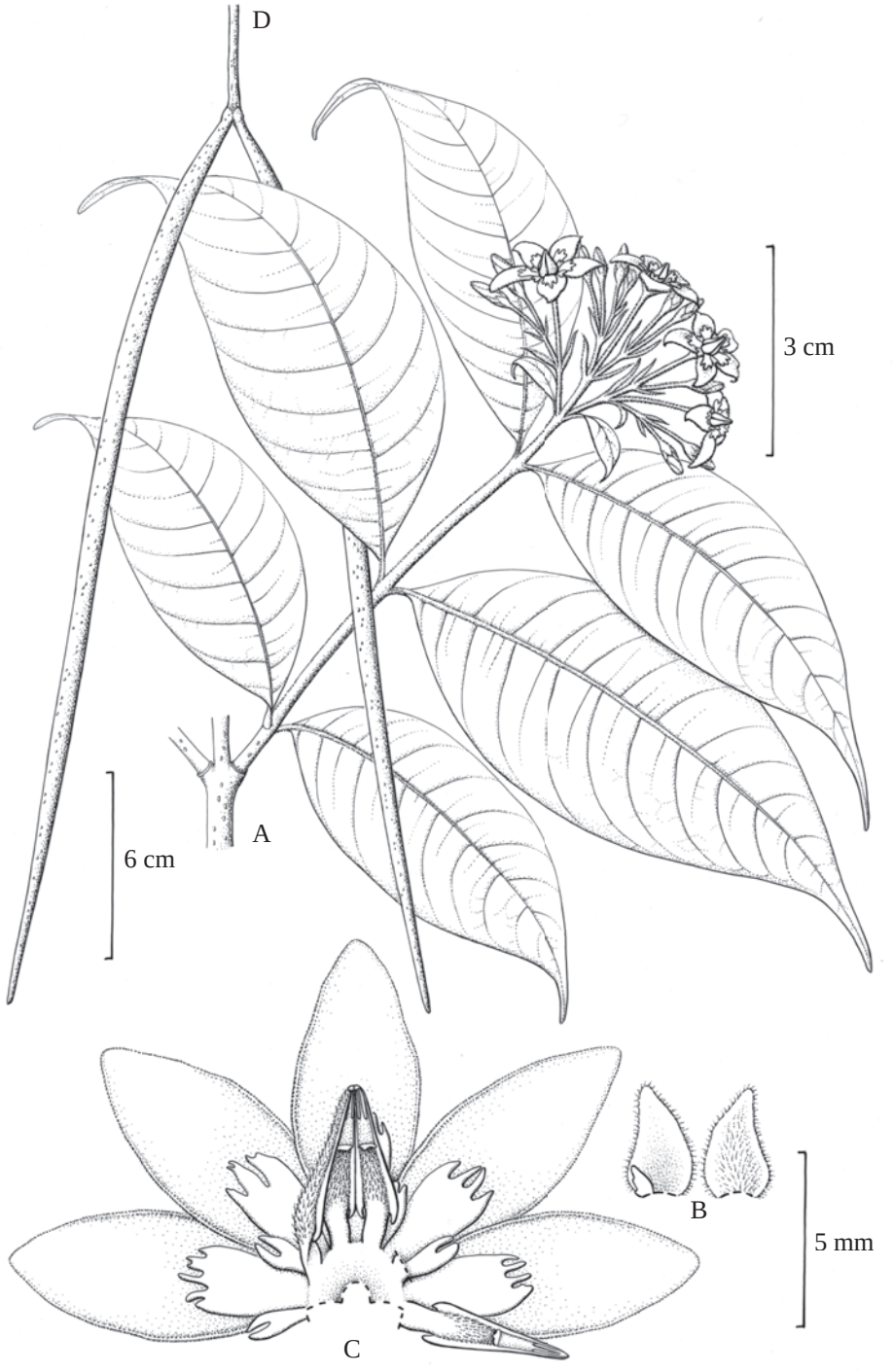

Figure 1. *Wrightia calcicola* D.J.Middleton: A. Habit; B. Calyx lobes from outside and from inside showing colleter; C. Flower opened out showing corolla, corona and stamens; D. Fruit. Illustration by Claire Banks.

flat and broad, glabrous inside, sparsely pubescent outside; anthers narrowly triangular, sagittate, ca 4.5 × 1.3 mm, sparsely pubescent inside and outside. *Gynoecium* of two apocarpous ovaries united into a common style; ovaries c.1.3 mm long, glabrous; style c.2.8 mm long; style head c.1 mm long. *Fruit* of paired narrowly fusiform follicles, 25–40 cm long, 3.5–6 mm wide, lenticellate. *Seeds* not seen.

Thailand.— NORTHERN: Nan [Amphoe Song Kwae, Tambon Yod, Tham Sakoen National Park, Tham Sakoen NP, 696 m alt., 3 March 2010, *M. Norsaengsri 6506* (**QBG**); ibid., 696 m alt., 3 March 2010, *M. Norsaengsri 6506* (**QBG**); ibid., 27 July 2011, *W. La-ongsri et al. 1835* (**E**, **QBG**)].

Distribution.— Only known from Tham Sakoen National Park in Nan Province.

Ecology.— Reported from forest on limestone at 696 to 800 m altitude.

IUCN Conservation Status.— Data Deficient (DD). This species is only known from two specimens from Tham Sakoen National Park in Thailand. There are scattered limestone outcrops in the area and in neighbouring Laos and neither the Extent of Occurrence or Area of Occupancy can be assessed with any degree of accuracy. Further exploration and an assessment of the threats to the known site are necessary before an IUCN conservation assessment can be made.

Notes.— *Wrightia calcicola* is most similar to *W. sikkimensis* Gamble, from Himalayan India, southern China and Vietnam, and *W. karaketii* D.J.Middleton, from Thailand, in the rotate corolla with stamens inserted near the throat, the two corona whorls, and the free carpels in the ovary which lead to paired fruits. It differs from both of these species by the smaller flowers in many-flowered inflorescences (corolla tube c.1.2 mm long vs. 2–5 mm; corolla lobes c.8.5 mm long vs. 9–20 mm; inflorescence with 10–18 flowers vs. < 10 flowers); from *W. sikkimensis* in corolla colour (yellow to greenish yellow vs. white) and the usually deeply lobed antepetalous corona lobes (usually divided at apex into fine 4–5 lobes vs. entire); and from *W. karaketii* in corolla colour (yellow to greenish yellow vs. bright red) and having quite distinct and narrow antepetalous and alternipetalous corona lobes (vs. hardly distinct and broad so as to form an almost continous ring in *W. karaketii*). Some of the material of *Wrightia calcicola* had previously been identified as *Wrightia viridiflora* Kerr but it differs from that species in the larger inflorescence with more flowers, the much less fimbriate corona lobes and the lack of a third ring of alternate corona lobes. *Wrightia calcicola* would not key out at all in Middleton (1999).

Figure 2. *Wrightia calcicola* D.J.Middleton: A. Leaf stem and inflorescence; B. Flowers. Photos by Woranuch La-ongsri.

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