

Two new species of *Chionanthus* (Oleaceae) from Southern Thailand

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ABSTRACT

Field surveys for the ‘Forest Trees of Southern Thailand’ project resulted in two new *Chionanthus* species, *C. gardneriorum* Kiew from Trang Province and *C. pyriformis* Kiew from Phangnga and Ranong Provinces. The new species are described and illustrated and a key to *Chionanthus* species in southern Thailand is provided.

KEYWORDS: *Chionanthus*, Oleaceae, Southern Thailand, new species.

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INTRODUCTION

Green (2000) described 15 species of *Chionanthus* from Thailand. During their field surveys for the Forest Trees of Southern Thailand project, S. Gardner & P. Sidisunthorn collected two new species. One, *Chionanthus pyriformis*, is distinctive in its pear-shaped (obpyriform) fruit. The other, *C. gardneriorum*, has ellipsoid fruits. *Chionanthus pyriformis* has yet

to be found in flower, but it has a very distinct fruit shape and in *Chionanthus* fruits are more useful in defining species than are the flowers. This is because the fruits show a wide range of size, shape, surface and thickness of the pericarp and the seed can have an endosperm or not (Kiew, 1980). These bring to ten the *Chionanthus* species that occur in southern Thailand (Gardner *et al.*, in press).

KEY TO *CHIONANTHUS* SPECIES IN SOUTHERN THAILAND

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|-----------------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| 1. Lower leaf surface densely hairy | C. decipiens |
| 1. Lower leaf surface glabrous | |
| 2. Lamina 4–9(–11) cm long; lateral veins 4–7 pairs; infructescences 0.8–5 cm long | |
| 3. Petioles 3–10 mm long; inflorescences 0.5–2 cm long | C. microstigma |
| 3. Petioles 2–5 mm long; inflorescences 2–5 cm long or shorter and ramiflorus | |
| 4. Lamina subcoriaceous, lateral veins faint, tip shortly pointed; fruits to 7 mm long. Restricted to limestone | C. calcicola |
| 4. Lamina membranous, lateral veins conspicuous, tip tapering; fruits to 12 mm long. Not on limestone | C. parkinsonii |
| 2. Lamina 9–30 cm long; lateral veins (5–)7–12 pairs; infructescences 4–12 cm long | |
| 5. Lateral veins 6–8 pairs | |
| 6. Lateral veins obscure, flat on both surfaces; fruit obpyriform, 28–35 mm long | C. pyriformis |
| 6. Lateral veins conspicuous, slightly raised above; fruit ellipsoid, 24–28 mm long | C. gardneriorum |
| 5. Lateral veins 8–12 pairs | |
| 7. Leaves obovate | |
| 8. Lamina 20–30 cm long; inflorescences 1–3 cm long, usually ramiflorus on bare twigs behind leaves | C. callophyllus |
| 8. Lamina 11–18(–28) cm long; inflorescences 4–8 cm long, axillary | C. thorelii |
| 7. Leaves lanceolate to elliptic-oblong | |
| 9. Petiole 1.5–3 cm long | C. ramiflorus |
| 9. Petioles 0.4–1 cm long | C. mala-elengi subsp. terniflorus |

Chionanthus gardneriorum Kiew, sp. nov.

Similar to *Chionanthus mala-elengi* subsp. *terniflorus* and *C. ramiflorus* in its glabrous, oblong-elliptic leaves more than 9 cm long and ellipsoid

fruit but it is different from *C. mala-elengi* in its larger fruit (not 10–12 × ca 8 mm) and fewer lateral veins on either side of the midrib (not 9–11) and from *C. ramiflorus* in its much shorter petiole (not

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15–30 mm), its caudate lamina apex (not acute to acuminate) and its fruit with a thick pericarp and seeds with two large cotyledons (not with a thin brittle pericarp and the seed with endosperm and thin cotyledons). Type: Thailand, Trang Province, Na Yong District, Khao Chong Gardens, nature trail behind tourist office, 7°33'N, 99°46'E, 6 Apr. 2004, *Gardner & Sidisunthorn ST0413* (holotype **BKF**; isotypes **K**, **KEP**). Fig. 1A.

Small tree to 2 m tall, bole ca 1.5 cm diameter. *Bark* mid-brown, quite smooth. *Twigs* pale creamy brown, slightly flaky. *Leaves*: petioles drying black, slender, 0.6–0.7 cm long; lamina in life mid-green above, slightly paler beneath, thinly coriaceous, glabrous, drying chestnut brown, veins and midrib much darker, lanceolate to elliptic-oblong, (10–) 11.5–13.5 × 3.3–4.5 cm, base cuneate, margin entire, apex acuminate to caudate, acumen 1–1.5(–2) cm; midrib slightly raised above, prominent and drying darker beneath, lateral veins (6–)7 on either side of the margin, conspicuous and slightly raised, looping to join a submarginal vein ca 2–3 mm from margin; intercostal veins faint on both surfaces. *Infructescences* axillary, 2–3(–6) cm, below the apical bud on the main stem, peduncle stout 3–4 × ca 3 mm. *Flowers* not known. *Fruit* ripening dark purple to black with pale brown lenticels, ellipsoid, 24–28 × 15–17(–20) mm, with a slight longitudinal ridge on one side; epi- and mesocarp fleshy, endocarp crustose, dry pericarp ca 2 mm thick; fruit stalk 3–4 mm long, 2–3 mm thick. *Seed* with 2 fleshy cotyledons.

Distribution.— Endemic in Thailand, known only from Trang Province.

Ecology.— Shady understorey in partially disturbed lowland evergreen forest at 60 m altitude.

Etymology.— The species is named in honour of the Gardners, Simon Gardner and Pindar Sidisunthorn, who first collected it.

***Chionanthus pyriformis* Kiew, sp. nov.**

Like *Chionanthus polygamus* (Roxb.) Kiew in its pear-shaped fruits but those fruits are different, being widest at the base, and they are smaller (to 12 × 6 mm), the pericarp dries thin and brittle, and the seed is endospermic. Besides, *C. polygamus* is a much taller tree with grey-white twigs. No Thai species has pear-shaped fruits. *Chionanthus pyriformis* is also different from all other Thai species in its

subcoriaceous leaves that dry chestnut brown and completely flat, the lateral veins being obscure and not raised either above or beneath. Type: Thailand, Phangnga, Khura Buri District, Sri Phang Nga National Park Headquarters, 8°28'N, 98°28'E, 22 June 2004, *Gardner & Sidisunthorn ST0832* (holotype **BKF**; isotype **K**). Fig. 1B–C.

Tree to 12 m tall, bole 15 cm diameter. *Bark* brown with many lenticels, inner bark dark orange. *Twigs* dark brown, minutely lenticellate, buds sharply pointed. *Leaves*: petioles drying dark brown, slightly thickened, wrinkled, 0.5–1 cm long; lamina elliptic, base cuneate, attenuate into petiole, margin recurved, apex caudate, acumen 1–1.5 cm long, glabrous, subcoriaceous, 9–13.5 × 4–5 cm; midrib impressed above, slightly prominent beneath; lateral veins obscure, flat above and beneath, beneath conspicuously paler, 7–8 pairs on either side of the midrib, looping and forming a submarginal vein ca 3–4 mm from the margin. *Inflorescence* and flowers not known. *Infructescence* axillary from the terminal pair of leaves, 8 mm long; pedicels thickened, 3–4 × 2 mm; bracts scarious, ca 1.5 mm long. *Calyx* persistent, lobes 2 × 2 mm, apex acute. *Fruit* grey-green ripening purple, pendent, obpyriform, 28–35 × 15–17 mm, narrowed to 6–7 mm at the base, mesocarp fleshy, endocarp 1 mm thick. *Seed*: endosperm copious.

Thailand.— PENINSULAR: Ranong [Suk Samran District, Khlong Nakha, evergreen forest on sandstone hill, 50 m, 22 June 1974, *Geesink et al. 7382* (**K**); *ibid.*, Khlong Nakha Wildlife Sanctuary Headquarters, 9°27'N, 98°30'E, 28 June 2004, *Gardner & Sidisunthorn ST0832a* (**KEP**, **K**)]; Phangnga [Khura Buri District, Sri Phang Nga National Park Headquarters, 8°28'N, 98°28'E, 22 June 2004, *Gardner & Sidisunthorn ST0832* (holotype **BKF**; isotype **K**)].

Distribution.— Endemic in Thailand, known only from Ranong and Phangnga Provinces.

Ecology.— Understorey of lowland evergreen forest, sometimes near streams or on sandstone substrates, 130 m altitude. Both specimens were collected in fruit in June, which suggests it might flower and fruit seasonally.

Etymology.— Pear-shaped (*pyriformis*), referring to its characteristic fruit shape.

Note.— None of the other Thai species have a pear-shaped fruit (Green, 2000). In Peninsular



Figure 1. New species of *Chionanthus*: A. Fruits of *Chionanthus gardneriorum*; B–C. Fruits of *Chionanthus pyriformis*. Photos by Simon Gardner & Pindar Sidisunthorn.

Malaysia, just one species, *C. polygamus* (Roxb.) Kiew has pear-shaped fruits but the fruits are widest at the base and they are smaller (to 12×6 mm), the pericarp dries thin and brittle, and the seed is endospermic.

Green (2000) included a brief description of *Chionanthus* sp. 'A' but without citing a specimen, nor are there specimens in BKF or K annotated as such. From his brief description, it appears to refer to *C. pyriformis* described here. The Kew specimen of *Geesink et al.* 7382 was annotated by him as '*Chionanthus* sp. B'. It is therefore not clear to what '*Chionanthus* sp. A' refers.

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