

A new species of *Mallotus* (Euphorbiaceae) from Vietnam

T.K.T. Nguyen* & N.T. Nguyen

Faculty of Biology, VNU University of Science,
Vietnam National University, Hanoi
334, Nguyen Trai Street, Thanh Xuan District, Hanoi, Vietnam
*kimthanh_bio@yahoo.com

ABSTRACT. A new species of Euphorbiaceae, *Mallotus phongnhaensis*, is described from Phong Nha - Ke Bang National Park, Vietnam. This new species belongs to *Mallotus* sect. *Axenfeldia* and is distinguished from other species in several significant features including its shrubby habit up to 1 m high, submarginal extrafloral nectaries with 6–12 per side, and few-flowered, cauliflorous inflorescences.

Keywords. Euphorbiaceae, *Mallotus phongnhaensis*, *Mallotus* sect. *Axenfeldia*, new species, Phong Nha - Ke Bang National Park, Vietnam

Introduction

Mallotus Lour. is a large genus of c. 150 species in Euphorbiaceae, subfamily Acalyphoideae, subtribe Rottlerinae (Sierra et al., 2007). Although two species in the genus occur in Africa and Madagascar, most are from tropical Asia with over 34 species known from Vietnam (Thin, 1999, 2007).

During an expedition to Phong Nha - Ke Bang National Park in the summer of 2006, an undetermined collection of *Mallotus* with shrubby habit, many submarginal extrafloral nectaries and cauliflorous inflorescences and fruits in the lower stem was collected. Based on comparisons with herbarium specimens at HNU and HN, and a study of the pertinent literature (Airy Shaw, 1972, 1975; Pax & Hoffmann, 1914; Ho, 1999; Thin, 1999, 2007; van Welzen et al., 2007), we determined that this collection did not correspond to any previously known *Mallotus* species. This new species is thus described below.

***Mallotus phongnhaensis* Thin & Kim Thanh, sp. nov.**

This new species differs from other species in *Mallotus* sect. *Axenfeldia* by its shrubby habit, presence of submarginal extrafloral nectaries along the leaf margin, and relatively few-flowered, cauliflorous inflorescences. — TYPE: Vietnam, Quang Binh Province, Phong Nha - Ke Bang National Park, Doc Tau area, 17°32'24"N, 106°16'59"E, 83 m, 1 July 2006, *Nguyen Nghia Thin 20060701-09* (holotype HNU; isotype HN). (Fig. 1, 2)

Shrub up to 1 m high, dioecious. Indumentum scattered, composed of stellate hairs. Branches with scattered hairs, cylindrical. *Stipules* deciduous, triangular, c. 1.2 mm,

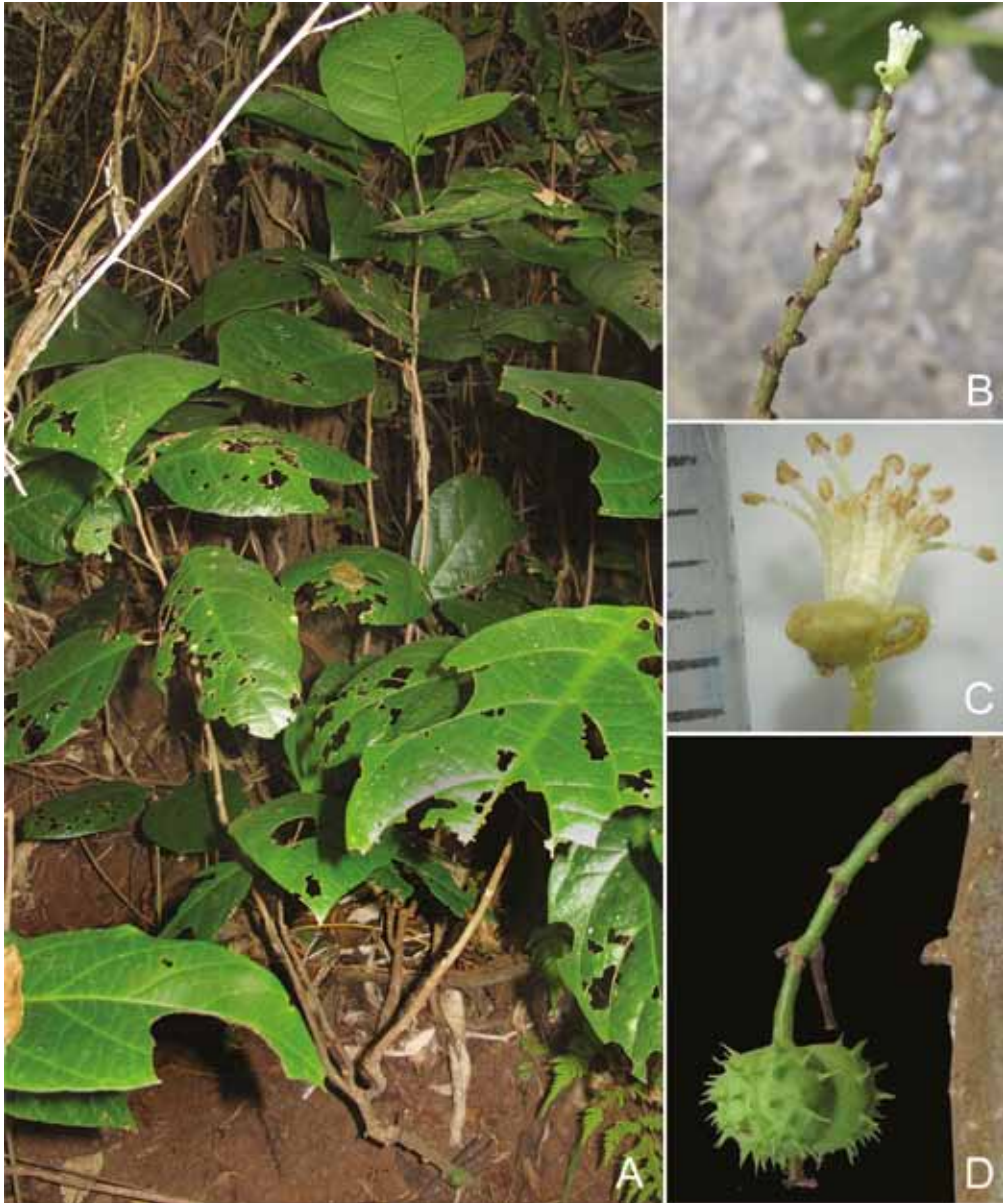


Fig. 1. *Mallotus phonghaensis* Thin & Kim Thanh. **A.** Habit. **B.** Part of staminate inflorescence, the axis shown c. 3 cm long. **C.** Detail of staminate flower (scale in mm). **D.** Fruit, c. 1 cm across. (Photos: Nguyen Thi Kim Thanh)

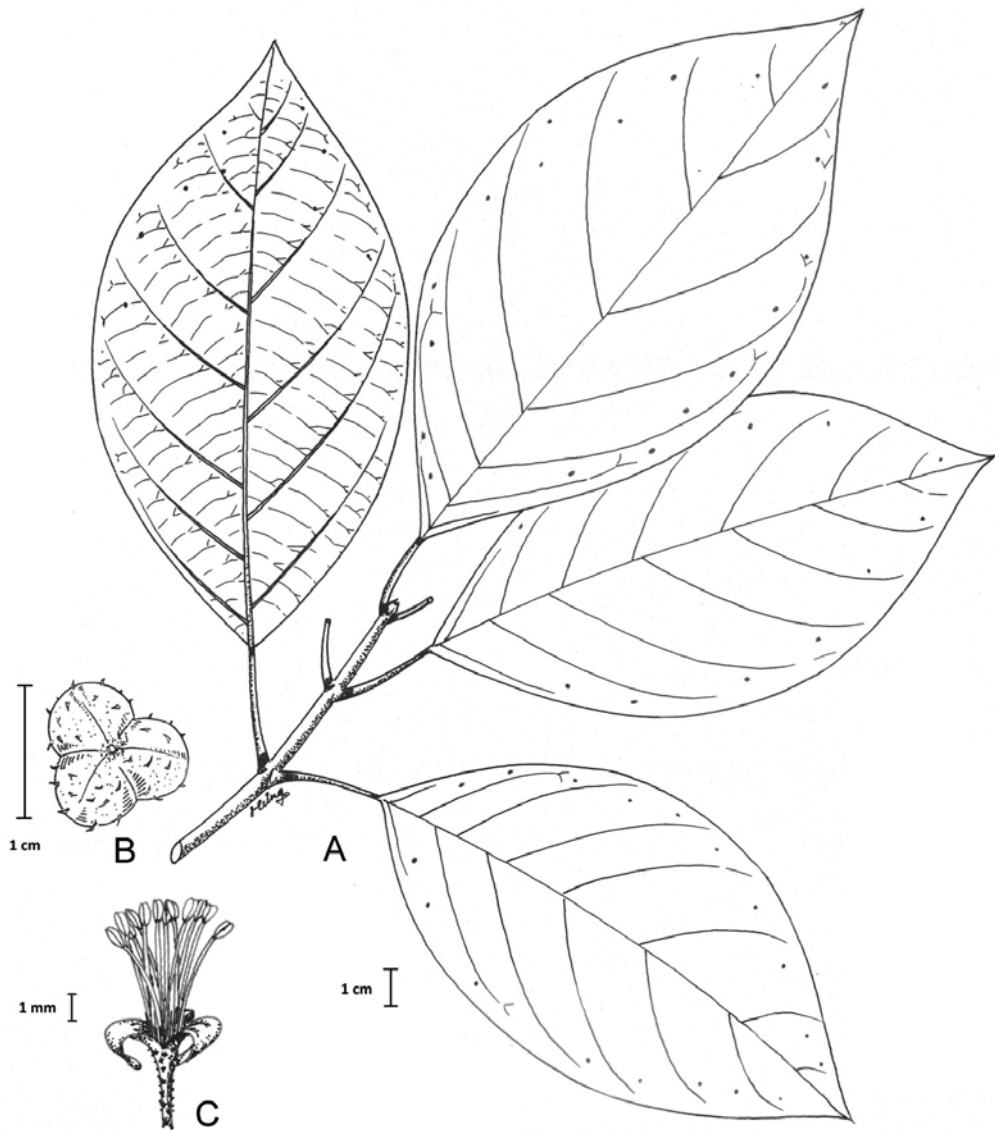


Fig. 2. *Mallotus phonghaensis* Thin & Kim Thanh. A. Details of leaves with submarginal extra-floral nectaries. B. Top view of fruit. C. Staminate flower. (Drawn by Nguyen Quang Hung)

glabrous. **Leaves** opposite, equal in size; petiole 1.5–4 cm long, glabrous; blade elliptic, 11.5–21.5 × 5.5–11 cm, papery; base cuneate; apex acuminate, 1–1.5 cm long; margin entire or subentire; adaxial surface glabrous, extrafloral nectaries submarginal throughout blade, 6–12 per side, 0.3–1 cm from margin, elliptic to orbicular, 0.3–0.5 × 0.2–0.3 mm, conspicuous; abaxial surface glabrescent, with scattered glandular scales, mainly on basal or marginal nerves; venation pinnate, nerves 7–10 per side, arching and ending near margin, veins conspicuous. **Staminate and pistillate inflorescences** cauliflorous on lower stem, short and thick. **Staminate inflorescences** 2–3 cm long, with 10–15 flowers, one flower per bract; bracts triangular, 2.2–2.5 × 1.2–1.6 mm. **Staminate flower** with 3 sepals that are elliptic to obovate, 3.2–3.7 × 1–1.3 mm; petals and disc absent; stamens 15–20, filaments 4–5 mm long; pistillode present. Pistillate inflorescences 2.5–3 cm long with 2–4 flowers, one flower per bract; bracts triangular, c. 1.5 mm long. **Pistillate flower** with 3 sepals; petals and disc lacking; ovary 3-locular, covered with stellate hairs and dense spines, spines 0.5–1 mm long; styles 0.2–0.3 mm long, stigmas c. 1.5 mm long, plumose. **Fruit** a loculicidal-septicidal capsule, c. 1.2 × 0.9 cm, on a long (up to 2 cm long) pedicel, spines sparse, blunt, c. 0.5–1 mm long; style persistent. **Seed** unknown.

Distribution and ecology. This species is only known from one population near a small stream within a humid forest not far from the road in Doc Tau area, Phong Nha - Ke Bang National Park, Quang Binh Province, Vietnam.

Flowering and fruiting. *Mallotus phongnhaensis* was observed in flower and fruit from May to July.

Etymology. The new species is named after its type locality.

Provisional IUCN conservation assessment. The type locality, the only known site, occurs within Phong Nha - Ke Bang National Park and is, therefore, under protection. However, the population size of this new species is fewer than 100 mature individuals. We, therefore, assess it as Endangered EN D under the IUCN Red List categories and criteria (IUCN, 2001) because it has fewer than 250 mature individuals.

Notes. The most comprehensive revision of *Mallotus* in Vietnam was done by Thin (1999, 2007), who recognised six sections: *Axenfeldia* (Baill.) Pax & Hoffm., *Hancea* (Seem.) Pax & Hoffm., *Rottleropsis* Müll.Arg., *Philippinense* Pax & Hoffm. (formerly section *Rottlera* Airy Shaw), *Stylanthus* (Reichb.f. & Zoll.) Pax & Hoffm. and *Mallotus* Müll.Arg. With its opposite leaves and pinnate venation, *Mallotus phongnhaensis* clearly falls within section *Axenfeldia*, which currently includes eight known species in Vietnam. Our new species is different from others in this section by the occurrence of 6–12 extrafloral nectaries just behind the leaf margin and the cauliflorous flowering habit.

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