

Mastixia langbianensis (Nyssaceae), a New Species from Vietnam

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ABSTRACT.— *Mastixia langbianensis* Phan Ke Loc & Chantar., a new species from southern Vietnam, is described. A key to the species of *Mastixia* in Vietnam is presented.

KEY WORDS: Nyssaceae, Cornaceae, Mastixiaceae, taxonomy

INTRODUCTION

Mastixia Blume (1825) is a small genus with *ca.* 25 species belonging to the family Nyssaceae (Angiosperm Phylogeny Group, 2016, formerly placed in Cornaceae or Mastixiaceae); it is distributed in southern China, Southeast Asia to the Solomon Islands. There were three species listed in Vietnam, namely *M. arborea* C.B. Clarke and *M. pentandra* Blume (Tardieu-Blot, 1968 & Pham-hoang Hô, 1992), including a new species, *M. parviflora* was described by Zhu (2000). After careful examination of the available specimens, assigned to *M. arborea* it was found that should be assigned to *M. pentandra*. Therefore, we conclude that *M. arborea* is not found in Vietnam - the species is restricted to Sri Lanka and India (Matthew, 1976), thus bringing the total of the species numbers in the genus down to two.

In July 2014, Phan Ke Loc & Quach Van Hoi collected an unfamiliar species of *Mastixia* in Langbian mountain, Lam Dong province, southern Vietnam; the specimens had young floral buds and faded flowers. Later, in January 2016, additional specimens, with ripe drupes, were collected from the same tree. After careful examination of these specimens and relevant taxonomic references (Tardieu-Blot 1968, Matthew 1976, Pham-hoang Hô 1992, Xiang et al. 2005, Hardwood & Chayamarit 2010), we conclude that these specimens are an undescribed taxon and name it as *Mastixia langbianensis*. From the taxonomic literature of this genus in Vietnam and neighbouring countries (Mathew, 1976, Wu & Soong, 1982, Zhu, 2000, Liu & Peng, 2009), three species are enumerated, namely *M. langbianensis*, *M. parviflora* H. Zhu and *M. pentandra* subsp. *cambodiana* (Pierre) K.M. Matthew. The description of the new taxon, with photo plates and a key to Vietnamese *Mastixia* are provided.

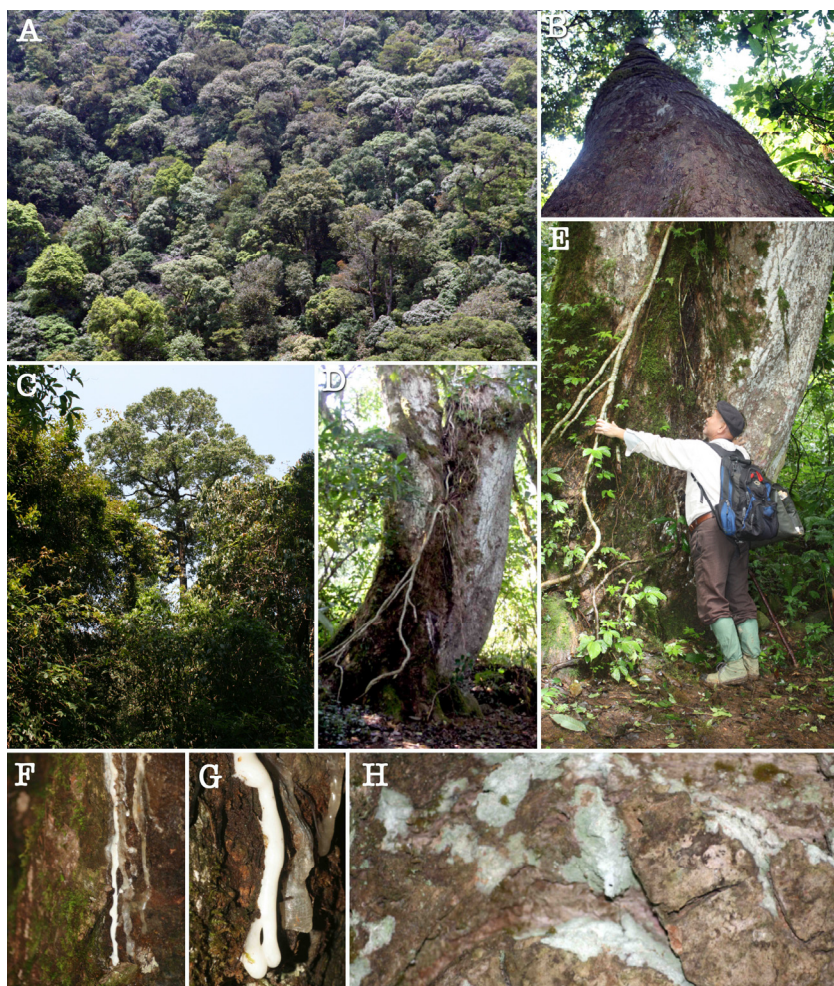


FIGURE 1. *Mastixia langbianensis*: A. view to forest with the dominance of *M. langbianensis*; B. trunk of big tree; C. crown; D. buttresses; E. the biggest and oldest tree with DBH up to 2.5 m; F. resin; G. resin, close-up; H. stem bark of the biggest tree. (Photos by Phan Ke Loc).

MATERIALS AND METHODS

Specimens were collected from field work using standard field methods with specimens deposited in HNU and KKU. Herbarium specimens were consulted from the following herbaria: BK, BKF, HNU, KKU and VNU (Thiers 2015, continuously updated). The vernacular name was provided here.

TAXONOMIC TREATMENT

Mastixia langbianensis Phan Ke Loc & Chantar., *sp. nov.* (Figs.1-4)

M. langbianensis is similar to *M. microcarpa* Y.C.Liu & H.Peng but differs in its large tree habit (vs shrub) and the oblongoid fruit, *ca.* 2.3 x 1.1 cm (vs ovoid, 0.5–0.6 x 0.3–0.4 cm) (Table 1).

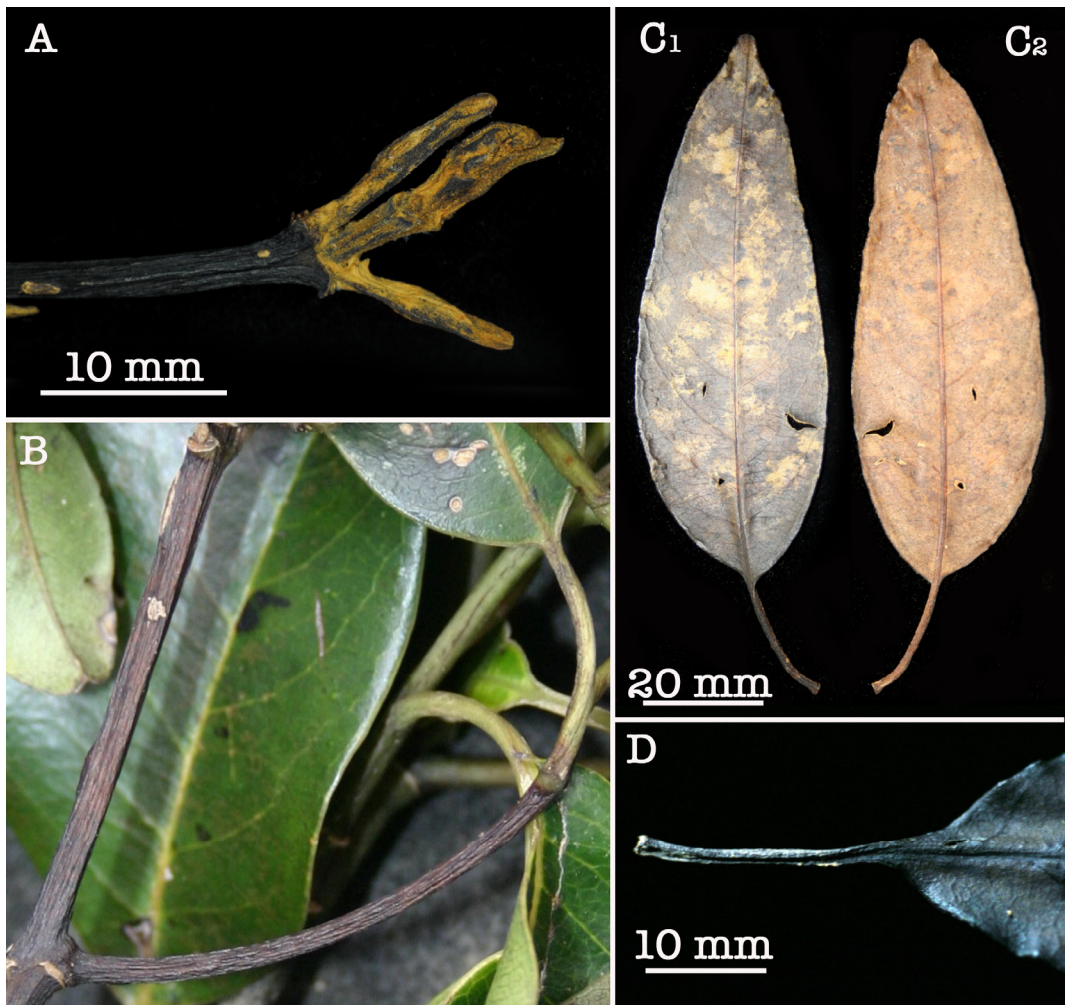


FIGURE 2. *Mastixia langbianensis*: A. just open vegetative part; B. branchlet 4-ridged; C1. dried leaf, adaxial face; C2. the same, abaxial face; D. petiole and midvein canaliculated adaxially. (Photos by Phan Ke Loc).

Type.— VIETNAM. Lam Dong, Langbian mountain, ca. 2100 m alt., January 2016, Phan Ke Loc & Quach Van Hoi P11448 (HNU) (holotype HNU; isotype KGU).

Tree unarmed, glabrous, evergreen, usually straight, 30–35 m tall, 1.7–2.2 (–2.5) m in DBH; buttresses small; main branches from trunk at first ascending, turning step by step horizontal forming crown spherical-

ovoid; resin milky white turning transparent, slightly fragrant. Branchlets slender, decussate, 4-ridged with conspicuous leaf scars. Young vegetative buds pubescent, bright orange. Leaves simple, exstipulate, opposite decussate, coriaceous, glabrous; petioles slender, 0.8–2.3 cm long, canaliculate; lamina ovate to shortly lanceolate, 4–9.5 x 2–3.5 cm; base cuneate to broadly cuneate,

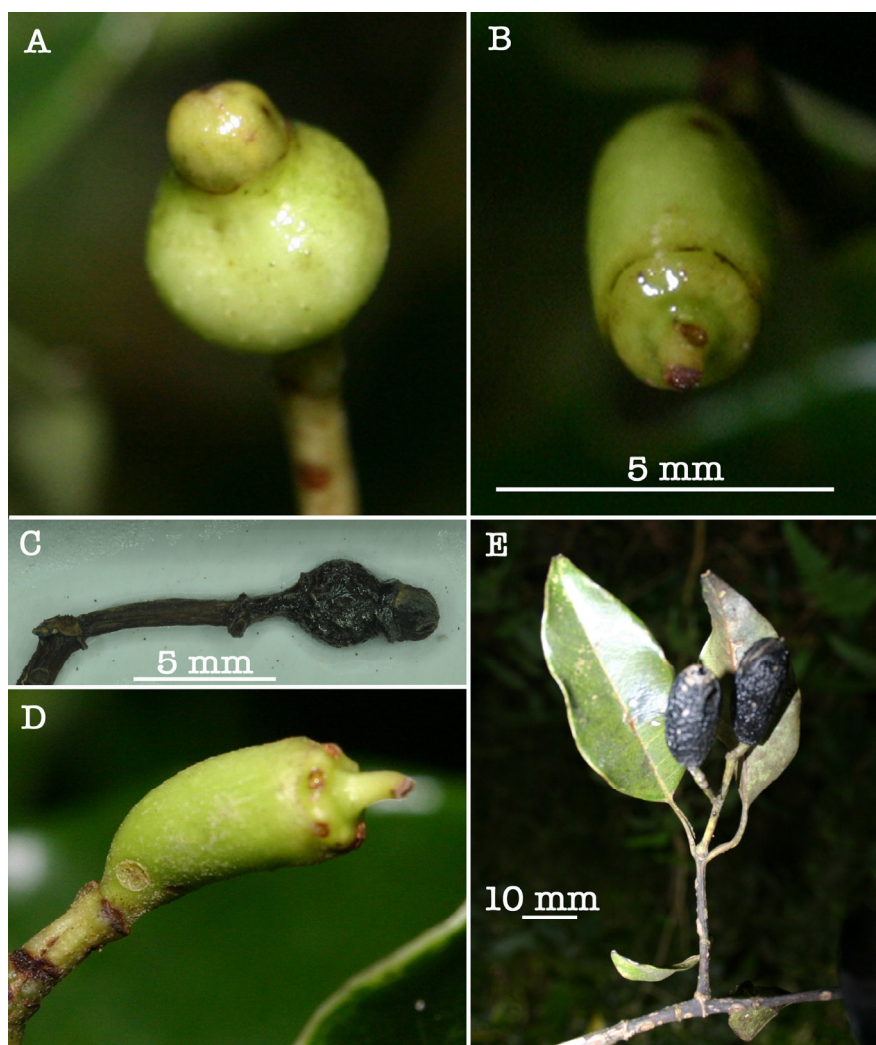


FIGURE 3. *Mastixia langbianensis*: A. & B. floral buds; C. dried flower bud; D. youngest drupe; E. few branchlet and loosely drupaceous infructescence. (Photos by Phan Ke Loc).

rarely sub-rounded, slightly decurrent and oblique; margin entire, rarely slightly undulate, with sparse pustules; apex acute; midrib impressed adaxially, connected to the channel of petiole, prominent abaxially; lateral veins 6–8 (–9) per side, camptodromus, prominent on both surfaces as well as veinlets; venation glabrous; domatia absent. Inflorescence terminal on the main shoots,

cymose, few branched, glabrous, up to 4 cm long, 4–5-flowered; inflorescence branches 4-angular. Flowers: opened flowers not seen, floral buds *ca.* 6 x 3.5 mm, 5-merous; pedicel *ca.* 2 mm long. Sepals broader than long, *ca.* 0.5 x 2 mm. Petals valvate, oblong, *ca.* 2.5 x 1.5 mm. Stamens alternating with the petals; anthers dorsifixed. Pistil: ovary inferior, carpel 1, locule 1, ovule 1, disk

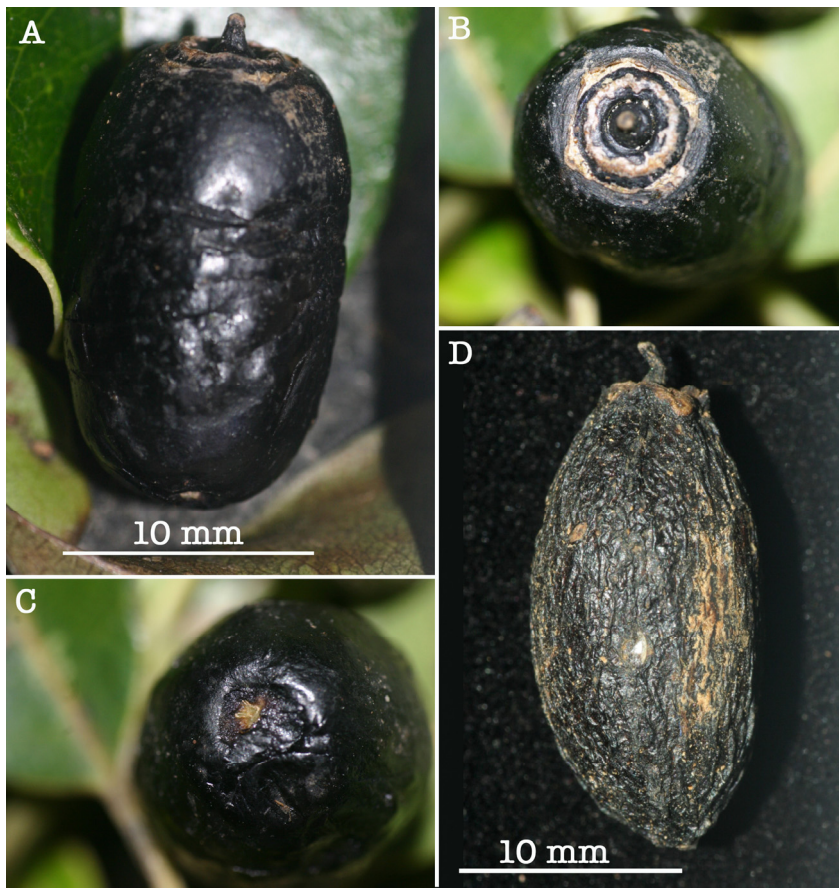


FIGURE 4. *Mastixia langbianensis*: A. ripen fresh drupe, lateral view; B. the same, top view; C. the same, bottom view; D. dried ripen drupe. (Photos by Phan Ke Loc).

epigynous, at fruiting slightly 5-lobed; style 1, stigma punctiform. Fruit: drupes, oblongoid, *ca.* 2.3 cm long, 1.1 cm in diam.; green turning to blue, finally blackish, shining; persistent disk and sepals inconspicuous, circular; style persistent, conical, short, *ca.* 2 mm long; dried drupes ellipsoid, *ca.* 2.2 x 0.9 cm; pericarp thin; endocarp woody, sulcate on one side externally and internally deeply protruding into the fruit cavity as a wedge-shaped intrusion, seed fitting the fruit cavity. Seed 1.

Distribution.— Lam Dong province, Langbian mountain.

Habitat.— The canopy of this species is in the highest storey of the primary closed evergreen seasonal tropical broad-leaved montane cloud forest on the sandstone slopes of Langbian mountain.

Phenology.— Collected young flowers in July, collected fruits in January.

Vernacular.— Búi lang bian (proposed here).

Etymology.— This new species is named after the type locality, Langbian mountain (núi Lang Bian in Vietnamese), in Vietnam.

TABLE 1. Morphological comparison of *Mastixia langbianensis*, *M. microcarpa*, *M. parviflora* and *M. pentandra*

Character	<i>M. langbianensis</i>	<i>M. microcarpa</i>	<i>M. parviflora</i>	<i>M. pentandra</i>
Habit	tree	shrub	tree	tree
Branchlets	glabrous	subglabrous	glabrous	subglabrous or puberulus
Leaf arrangement	opposite	opposite	alternate	alternate
Leaf apex	acute	acute or acuminate	acute	acute to acuminate
Abaxial leaf surface	glabrous	subglabrous	glabrous	subglabrous
Inflorescence	glabrous	glabrous	pubescent, glabrescent	pubescent
Flowers	5-merous	5-merous	4-merous	5-merous
Inf. position	terminal	terminal	terminal	terminal
Fruit shape	oblongoid	ovoid	-	ovoid to oblong
Fruit size (cm)	ca. 2.3 x 1.1	0.5–0.6 x 0.3–0.4	-	1.5–2.5 x 1–1.7

Note.— *Mastixia langbianensis* is similar to a Chinese species of *Mastixia*, *M. microcarpa* Y.C.Liu & H.Peng by having opposite leaves and 5-merous flower but is distinguished by a large tree (vs shrub 3 m tall), glabrous branchlets and leaves (vs subglabrous branchlets and abaxial surface), a few-flowered inflorescence (vs many flowered) and a ripe drupe which is oblongoid in shape and the size is ca. 2.3 x 1.1 cm (vs ovoid 0.5–0.6 x 0.3–0.4 cm).

IUCN Conservation status.— This species is known from Mt. Lang Bian which is in the Bidoup-Nuiba National Park, Lam Dong Province in southern Vietnam. Population of

this species comprises adult trees only with no natural regeneration (no seedlings nor saplings were seen). According to the IUCN threatened criteria (IUCN, 2012), the species is assessed to be Least Concern (LC), due to an abundance of mature populations found in the area, where is well-protected. Therefore, we believe existing abundant populations remain in the national park.

Additional specimen examined (paratype).— VIETNAM: Lam Dong, Langbian mountain, young floral buds and very young drupes, 27 July 2014, Phan Ke Loc & Quach Van Hoi P11321 (HNU).

Key to the species of *Mastixia* in Vietnam

- 1. Flowers 4-merous *M. parviflora*
- 1. Flowers 5-merous 2
- 2. Leaves alternate. Inflorescence pubescent *M. pentandra* subsp. *cambodiana*
- 2. Leaves opposite. Inflorescence glabrous *M. langbianensis*

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