Phytotaxa 415 (3): 153–156
https://www.mapress.com/j/pt/

Correspondence

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

https://doi.org/10.11646/phytotaxa.415.3.6

Gluta laosensis (Anacardiaceae), a new species from Vientiane, Laos

SHUICHIRO TAGANE[1,*], CHIKA KAMEDA[2], SOUPHACHAY PHOUPHASOUK[3] & PHETLASY SOULADETH[2]
[1]*The Kagoshima University Museum, Kagoshima University, 1-21-30 Korimoto, Kagoshima, 819-0065, Japan.*
[2]*Faculty of Forest Science, National University of Laos, Dongdok campus, Vientiane, Lao PDR.*
[3]*Faculty of Agriculture, National University of Laos, Nabong campus, Vientiane, Lao PDR*
**Authors for correspondence: stagane29@gmail.com*

A new species of *Gluta* (Anacardiaceae), *Gluta laosensis* Tagane & Kameda, from Vientiane, Central Laos, is described and illustrated. A new species is easily distinguished from the other species of the genus in Indo-China in having short petioles less than 4 mm long, obovate-oblong or oblong-elliptic leaf blade with rounded to slightly cordate base, and 18–24 pairs of secondary veins.

Keywords: flora, Indochina, Sapindales, taxonomy

Introduction

The genus *Gluta* Linnaeus (1771: 293) is trees or rarely shrubs of Aacardiaceae distributed from Madagascar, India, Myanmar, Indo-China, Thailand, to throughout Malesia (Kochummen 1996, Chayamarit 2010). It consists of about 30 species, among which four species have been known from Laos: *G. cambodiana* Pierre (1897: 368), *G. laccifera* (Pierre 1885: 538) Ding Hou (1978a: 14), *G. tavoyana* Wallich ex Hooker (1879: 22) and *G. usitata* (Wallich 1829: 29) Ding Hou (1978a: 21) (Tardieu-Blot, 1962, Newman *et al.* 2007, Chayamarit 2010, Gardner *et al.* 2015).

Whilst conducting botanical exploration of Vientiane Capital, Central Laos by the second and third authors, an interesting *Gluta* species was discovered in mixed deciduous forest. After a careful examination using taxonomic literature (Tardieu-Blot 1962, Ding Hou 1978b, Kochummen 1996, Hô 2003, Chayamarit 2010) and dried specimens of the herbaria (BKF, FOF, FU, HNL, KAG, SAR, TNS and VNM, abbreviations following Thiers 2016) as well as digital specimen images of JSTOR Global Plants (https://plants.jstor.org/), we confirmed that this plant represents a distinctive taxonomic entity and thus describe it as a new species.

Taxonomy

Gluta laosensis Tagane & Kameda, *sp. nov.* (Fig 1.)

TYPE:—LAOS. Vientiane Capital: Sangthong District, Napo Village, 220 m elev., 18°15′24.5″N, 102°10′29.5″E, 25 Feb. 2018, *Kameda K164* [fl.] (holotype FOF!; isotype P).

Similar to *Gluta velutina* Blume in leaf shape, short petiole to 4 mm long (to 7 mm in *G. velutina*) and fruits without wing-like petals but differs in lower leaf more or less covered with brown hairs (vs. glabrous in *G. velutina*), pubescent petals (vs. glabrous), and smooth reniform-fruits (vs. pale brown scurfy and subglobose, with irregularly tuberculate ridges at base).

Description. Tree to 15 m tall; bark pale gray, grayish to reddish brown. Young twigs densely covered with brown velvety hairs, old twigs glabrescent, with sap which slowly turns reddish brown when exposure. Leaves alternate, clustered near end of twigs; blade obovate-oblong, oblong-elliptic, 8.7–22.2 × 2.2–6.4 cm, thinly leathery, densely brown hairy when young, soon glabrous except near base of blade and midrib adaxially, densely velvety hairy to sparsely hairy abaxially, apex acuminate to acute, base rounded to slightly cordate, margin recurved, midrib prominent on both surfaces, secondary veins 18–24 pairs, slightly prominent adaxially, prominent abaxially, tertiary veins finely reticulate, prominent abaxially, distinct on both surfaces; petioles short, to 4 mm long, densely brown hairy, grooved above, rounded below. Inflorescences axially, laxly branched panicle, 4.8–11 cm long, rachis densely brown hairy. Flowers: pedicels 3–4 mm long, pubescent; calyx ca. 7.5 mm long, reddish purple, pubescent outside, irregularly splitting into 2 parts, caducous; petals 5 (or 6), obovate, ca. 11 × 2.6 mm, whitish to pinkish, apex obtuse, pubescent on both surfaces, margin ciliate. Stamens 5(–6), 4–5.5 mm long, separated from the distinct stalk (torus), glabrous, anther oblong, 1–1.2 mm long; torus cylindrical, ca. 4 mm long. Ovary obliquely

Accepted by Sin Yeng Wong: 19 Aug. 2019; published: 29 Aug. 2019

ellipsoid, ca. 1.2 mm long, glabrous, shortly stalked, with style on one side; style, ca. 0.8 mm long. Fruit reniform, 2.8–5.5 cm long, 1.6–3.3 cm wide, 1.5–2 cm thick, glabrous, smooth, without wing-like petals, blackish when dry; fruiting pedicels 1.6 cm long. Seed reniform, 2–4.2 cm long, 1.3–2.5 cm wide, 1–1.5 cm thick, grayish brown.

Additional specimens examined (Paratypes):—LAOS. Vientiane Capital: Sangthong District, Ban Napo, 304 m elev., 18°16′20.9″N, 102°11′09.7″E, 20 Jan. 2016, *Kameda C., Phouphasouk S. K160* [ster.] (FOF!); same locality, 1 June 2016, *Kameda C., Phouphasouk S. K161* [ster.] (FOF!); same locality, 2 June 2016, *Kameda C., Phouphasouk S. K162* [fr.] (FOF!); same locality, 2 June 2016, *Kameda C., Phouphasouk S. K163* [ster.] (HNL).

Distribution:—LAOS. Vientiane Capital (so far known only from Sangthong District).

Habitat and Ecology:—In mixed deciduous forest, disturbed semi-evergreen forest on hills, characterized by a typical monsoon climate with a distinct rainy (May to November) and dry season (December to April); 200–310 m elevation. Flowering specimens were collected in February and fruiting specimens in June.

Etymology:—The specific epithet refers to the country in which this species is found.

Vernacular name:—ນ້ຳກ້ຽງນ້ອຍ (Nam kiang noy).

Preliminary conservation assessment:—*Gluta laosensis* is locally common in the Experimental Forest of National University of Laos, where the area is about 10 km^2 covered by mixed deciduous forest and disturbed semi-evergreen forest. From our field observation based on several sample plots established in the Experimental Forest, we estimate its number of individuals to be 5000/km^2(=50/ha). Given the relatively large number of individuals and same forest types widely seen also outside of the Experimental Forest, the species is provisionally assigned to the IUCN conservation category of Least Concern (LC) (IUCN 2012).

Note:—*Gluta laosensis* is easily distinguished from the other species of the genus in Indo-China in having short petioles less than 4 mm long, obovate-oblong or oblong-elliptic leaf shape, rounded to slightly cordate leaf base, and 18–24 pairs of secondary veins. *Gluta velutina* distributed in Indonesia (Java, Kalimantan, Sumatra), Malaysia (Borneo, Peninsular), Myanmar, Thailand (Peninsula) and Vietnam is apparently similar in leaf shape, but in addition to the diagnosis mentioned above, they differ in their habitats: *G. laosensis* grows in mixed deciduous forest and secondary semi-evergreen forest, while *G. velutina* grows at edge of tidal rivers (Kochummen 1996, Chayamarit 2010).

Key to the species of *Gluta* in Indochina (Cambodia, Laos and Vietnam) (based on Tardieu-Blot 1962 and Chayamarit 2010).

1. Flowers calyptriform, circumscissile from base and falling off in one piece at anthesis; fruits with wing-like petal 2
2. Leaves pubescent; fruit body 1–3 cm in diam., with wing-like petals 5–10 cm long ..... ***G. usitata***
2. Leaves puberulous to glabrous; fruit body 3–5 cm in diam., wing-like petals shorter than 4 cm ..... ***G. laccifera***
1. Calyx irregularly splitting into one side-lobed at anthesis; fruits without wing-like petals, or small if any 3
3. Inflorescence glabrous; leaves thickly coriaceous ..... ***G. compacta*** Evrard (1952a: 84)
3. Inflorescence pubescent; leaves subcoriaceous to coriaceous 4
4. Leaf apex obtuse, rounded, slightly emaginate 5
5. Petiole longer than 1 cm; fruits longer than 3 cm ..... ***G. megalocarpa*** (Evrard 1952b: 131) Tardieu-Blot (1961: 195)
5. Petiole shorter than 5 mm; fruits ca. 5 mm in diam ..... ***G. gracilis*** Evrard (1952a: 83)
4. Leaf apex acute to acuminate 6
6. Petiole longer than 2 cm 7
7. Leaves with 14–18 pairs of secondary veins; ovary glabrous; fruit ca. 3.5 cm long, scaly-scurfy ..... ***G. tavoyana***
7. Leaves with 9–14 pairs of secondary veins; ovary densely puberulous; fruit 6–7 cm long, brown tomentose ..... ***G. wrayi*** King (1896: 482)
6. Petiole shorter than 1 cm 8
8. Petiole flattened; calyx greenish; ovary pubescent ..... ***G. cambodiana***
8. Petiole grooved above; calyx reddish; ovary glabrous 9
9. Leaves more or less covered with brown hairs; petals pubescent; fruits reniform, smooth ..... ***G. laosensis***
9. Leaves glabrous; petals glabrous; fruit subglobose, with irregularly tuberculate ridges at base ..... ***G. velutina***

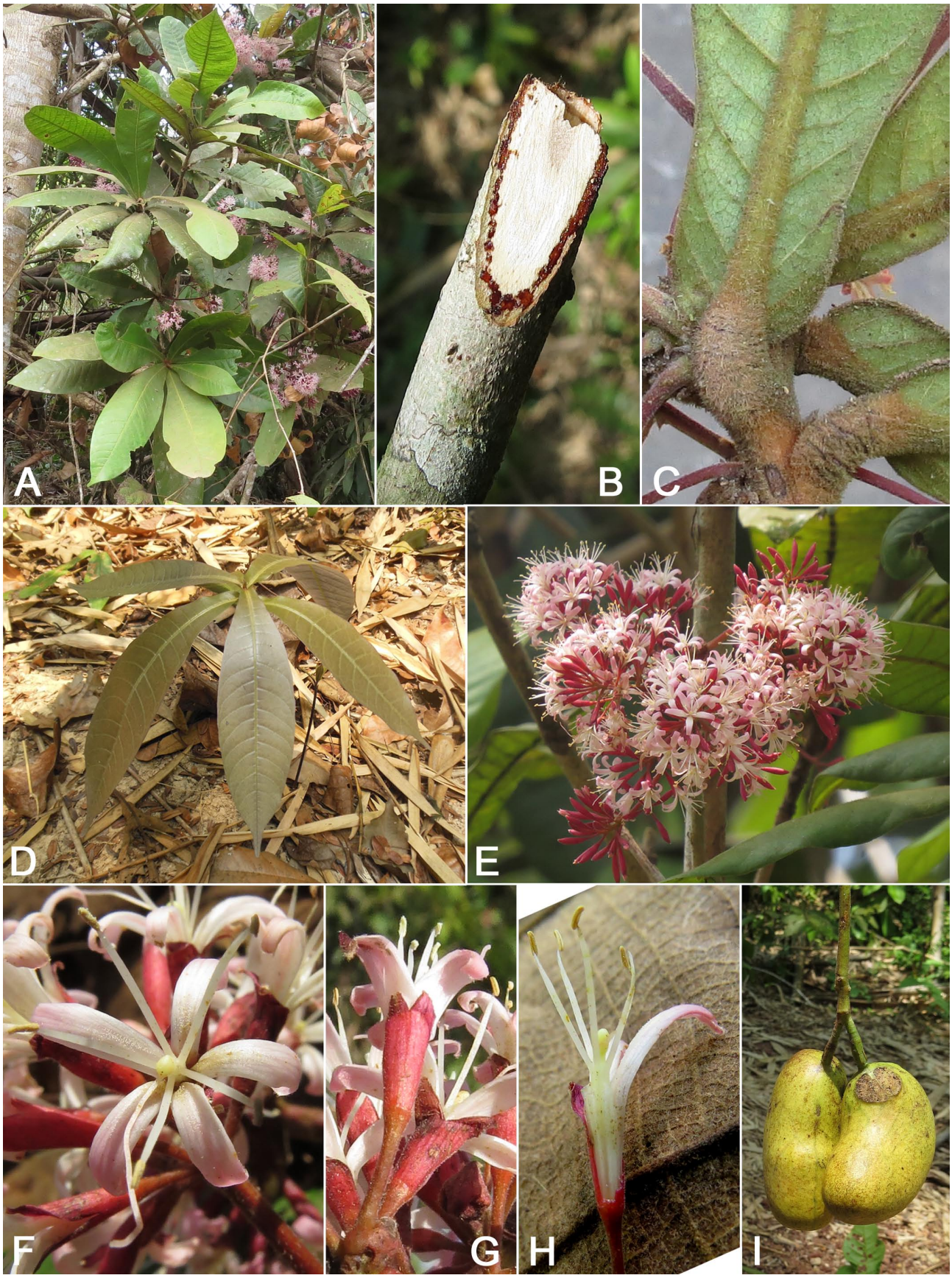

FIGURE 1. *Gluta laosensis* Tagane & Kameda. A) Flowering twigs, B) Section of twigs showing reddish-brown exudate, C) Portion of abaxial leaf surface, D) Sapling with young leaves, E) Inflorescence, F) Flower, top view, G) Flowers, side view, H) Flower some petals and calyx removed, I) Fruits. Photos A & E taken on 20 Feb. 2014, B & I on 1 June 2016, C, F–H on 25 Feb 2018, D on 19 Apr. 2014.

Acknowledgements

The authors are grateful to curators of the herbaria BKF, FOF, FU, HNL, KAG, KYO, SAR, TNS and VNM for making their specimens accessible. This study was supported by General Agriculture & Forestry Co. Ltd, the Environment Research and Technology Development Fund (4-1601) of the Ministry of the Environment, Japan, and MEXT/JSPS KAKENHI (Grant Number JP15H02640).

References

Chayamarit, K. (2010) Anacardiaceae. *In*: Santisuk, T. & Larsen, K. (Eds.) *Flora of Thailand, vol. 10*. The Forest Herbarium, Bangkok, pp. 265–329.

Ding Hou (1978a) Florae Malesianae Praecursores LVI. Anacardiaceae. *Blumea* 24 (1): 14: 1–41.

Ding Hou (1978b) Anacardiaceae. *In:* van Steenis, C.G.G.J (Ed.) *Flora Malesiana. Series 1. Spermatophyta, vol. 8.* Groningen, Wolters-Noordhoff, pp. 395–548.

Evrard, F. (1952a) Anacardiacées, Mangiférées nouvelles indochinoises. 1. *Mangifera*, *Gluta*, *Swintonia. Bulletin de la Société Botanique de France* 99: 82–84.
https://doi.org/10.1080/00378941.1952.10837681

Evrard, F. (1952b) Anacardiacées-Mangiférées nouvelles indochinoises. II. *Melanorrbrea*, *Bouea*. *Bulletin de la Société Botanique de France* 99: 131. [1952]
https://doi.org/10.1080/00378941.1952.10837687

Gardner, S., Sidisunthorn, P. & Chayamarit, K. (2015) *Forest Trees of Southern Thailand, vol. 1*. Kobfai Publishing Project, Bangkok, 768 pp.

Hô, P.H. (2003) *Cay Co Viet Nam: An Illustrated Flora of Vietnam, vol. 2*. Published by the author, Montreal, 951 pp.

Hooker, J.D. (1879) Anacardiaeae. *In:* Hooker, J.D. (Ed) *The flora of British India, vol. 2.* L. Reeve & Co., London, pp. 7–44.

IUCN (2012) *IUCN Red List Categories and Criteria, Version 3.1*. Gland and Cambridge. Available from: http://www.iucnredlist.org (accessed 10 April 2017)

King, G. (1896) Materials for a Flora of the Malayan Peninsula. *Journal of the Asiatic Society of Bengal. Part 2. Natural History* 65 (3): 339–516.

Kochummen, K.M. (1996) Anacardiaceae. *In:* Soepadmo, E., Wong K.M. & Saw, L.G. (Eds.) *Tree Flora of Sabah and Sarawak, vol. 2*. Forest Research Institute Malaysia (FRIM), Kepong, pp. 1–92.

Linnaeus, C. (1771) *Mantissa Plantarum Altera*. *Generum editionis VI & specierum editionis II. Holmiae [Stockholm]*. 584 pp.

Newman, M., Ketphanh, S., Svengsuksa, B., Thomas, P., Sengdala, K., Lamxay, V. & Armstrong, K. (2007) *A Checklist of the Vascular Plants of Lao PDR*. Royal Botanic Garden Edinburgh, Edinburgh. 394 pp.

Pierre, L. (1885) *Bulletin Mensuel de la Société Linnéenne de Paris* 68: 537–544.

Pierre, L. (1897) *Flore forestière de la Cochinchine, vol. 4*. O. Doin, Paris, t. 368.

Tardieu-Blot, M. (1961) Sur les *Gluta*, *Swintonia* et *Melanorrhoea* (Anacardiaceae) indochinois. *Adansonia n.s. sér.* 1: 192–197.

Tardieu-Blot, M. (1962) Anacardiaceae. *In:* Aubréville, A. (Ed.) *Flore du Cambodia, Laos du Vietnam, vol. 2*. pp. 67–194.

Thiers, B. (2016 [continuously updated]) *Index Herbariorum: A global directory of public herbaria and associated staff*. New York Botanical Garden's Virtual Herbarium. Available from: http://sweetgum.nybg.org/science/ih/ (accessed 29 August 2019)