

Uvaria clementis (Annonaceae), a new record for Thailand

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ABSTRACT

A new species record for Thailand, *Uvaria clementis* is discovered from Khao Luk Lom Mountain, Rattaphum District, Songkhla Province. A description and photographs are provided.

KEYWORDS: Annonoideae, Southern Thailand, *Uvaria*.

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INTRODUCTION

Uvaria L. (Annonaceae) is a species-rich genus belonging to tribe Uvarieae in subfamily Annonoideae (Chatrou *et al.*, 2012; Guo *et al.*, 2017) and comprises ca 200 species of climbers or scrambling shrubs, widespread in tropical forests in Africa, Madagascar, continental Asia, Malesia, Northern Australia and the Bougainville–Solomon Islands chain (Zhou *et al.*, 2010; Guo *et al.*, 2017; Meade & Parnell, 2018). Within the Annonaceae, the genus is characterised by a climbing habit with stellate hairs over all vegetative and floral organs, flowers having generally valvate sepals, imbricate petals in two subequal whorls and generally laterally attached ovules and many-seeded apocarpous fruits (Zhou *et al.*, 2010; Meade & Parnell, 2018).

Recent phylogenetic analyses of *Uvaria* taxa within the Annonaceae have suggested that *Uvaria* is monophyletic but includes the formerly accepted genera *Anomianthus* Zoll., *Balonga* Le Thomas, *Cyathostemma* Griff., *Dasoclema* J.Sinclair, *Ellipeia* Hook.f. & Thomson, *Ellipeiopsis* R.E.Fr. and *Rauwenhoffia* Scheff. These genera have now been subsumed into *Uvaria sensu lato* (Zhou *et al.*, 2010; Chatrou *et al.*, 2012; Meade & Parnell, 2018).

Meade & Parnell (2018) established 22 confirmed *Uvaria* species records for Thailand (clarifying the earlier account of Pooma & Sudddee, 2014). During a recent survey of Annonaceae in Songkhla Province, Thailand, new collections from Khao Luk Lom Mountain in Rattaphum District were made that did not match any *Uvaria* species known from Thailand. Following an inspection of relevant regional Annonaceae accounts (Sinclair, 1955; Utteridge, 2000; Zhou *et al.*, 2009; Attanayake *et al.*, 2011; Meade & Parnell, 2018) as well as direct examination of all relevant type materials, these collections were identified as *Uvaria clementis* (Merr.) Attan., I.M.Turner & R.M.K.Saunders. Previously known from Peninsular Malaysia, Singapore, Sumatra, Borneo and Seram, this is the first confirmed collection for this taxon from Thailand. A description and photographs below are presented based on the collections and observations made in Thailand.

DESCRIPTION

Uvaria clementis (Merr.) Attan., I.M.Turner & R.M.K.Saunders, Novon 21: 166. 2011.—*Artabotrys clementis* Merr., J. Straits Branch Roy. Asiat. Soc. 85: 174. 1922. Type: Malaysia, Sabah, Sandakan and

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vicinity, Sept.–Dec. 1920, Ramos 1667 (lectotype **K** [K000786696!], designated by Attanayake *et al.*, 2011; isolectotype **A!**). Fig. 1.

— *Uvaria parviflora* Hook.f. & Thomson, Fl. Ind. 103 (1855), **nom. illeg.** [non A.Rich. (1831), nec Hook.f. & Thomson in Hook.f., Fl. Brit. India 1: 51 (1872)].— *Uva parviflora* (Hook.f. & Thomson) Kuntze, Revis. Gen. Pl. 1: 8 (1891).

— *Cyathostemma hookeri* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 61(1): 10. 1892, **nom. illeg. superfl.**; Boerl., Icon. Bogor. 1: 125, t. 42. 1899; Merr., Bibl. Enum. Born. Pl.: 263. 1921; Ridl., Fl. Malay Penins. 1: 28. 1922; J. Sinclair, Gard. Bull. Singapore 14(2): 223. 1955; Utteridge, Blumea 45(2): 386. 2000.

— *Uvaria kingii* L.L.Zhou, Y.C.F.Su & R.M.K. Saunders, Syst. Biodivers. 7(3): 255. 2009, **nom. illeg. superfl.** Type: Malaysia, Prince of Wales Island [Penang], *Phillips s.n.* (lectotype **K** [K000615957!], designated by Attanayake *et al.*, 2011).

Woody climber. *Twigs* sparsely covered with brown stellate hairs to subglabrous, eventually glabrous. *Leaves* subcoriaceous, waxy, drying dark brown above and below, oblanceolate, elliptic-oblanceolate or narrowly obovate, 10–24 by 4–9.5 cm; base rounded, broadly cuneate or slightly oblique-rounded; apex acuminate or acute, the acumen 3–15 mm long; glabrous adaxially, glabrous, except with sparse stellate hairs on midrib abaxially; midrib sunken adaxially, raised abaxially; lateral veins 9–12 per side; petiole 5–10 mm long, sparsely brown stellate. *Inflorescences* leaf-opposed or extra-axillary, floral buds 1–3, often only the primary flower opened, the others enclosed by bracts, peduncle 1.5–3.5 by 0.8–1 mm, pedicel 8–11 by 0.8–1 mm, peduncle and pedicel terete, covered with brownish stellate hairs; basal bract ovate, 1–2.5 by 0.5–1.5 mm; medial bracts ovate, 1.5–2 by 1–1.5 mm, obtuse. *Sepals* 3, green, valvate, broadly ovate, 2–2.5 by 2.5–3 mm, concave, apex rounded, sparsely covered with brown stellate hairs, more densely so at margins outside, glabrous or with stellate hairs towards margins inside. *Petals* 2 whorls of 3, green or yellow, with fine vertical furrows on outer surface, prominent when dried, indumentum persistent on outer surface, sparse medially, somewhat prominent at margins, glabrous on inner surface; outer petals coriaceous, ovate, 4–4.5 by 4–4.5 mm, concave, slightly spreading

at maturity to clearly expose carpels, apex bluntly acute; inner petals subcoriaceous, ovate with distinctly constricted base, 4–4.5 by 4–4.2 mm, apex bluntly acute. *Stamens* numerous, wedge-shaped, 1.2–1.5 mm long; anther connective apex truncate, incurved, papillate; anther locules extending the full length of the stamen; filament absent. *Carpels* 10–18; ovary oblongoid, 1–1.6 mm long, straight, glabrous except for prominent ring of hairs on ovary neck just beneath stigma; stigma glabrous, U-shaped, not elongate, 0.3–0.5 mm long; ovules 4–12. *Fruits* of 4–6 monocarps, borne on a pedicel 12–15 mm long. *Monocarps* green when young, oblong, ellipsoid or ovoid-ellipsoid, 28–55 by 18–26 mm, surface glabrous, granular or minutely tuberculate, pericarp fleshy at maturity, drying thin; stipe 30–60 by 2–3 mm, glabrous, compressed. *Seeds* 4–8, in 2 rows packed closely together, 15–18 by 8–10 mm, compressed ellipsoid, smooth, ruminations visible, lamelliform, aril present, circular.

Thailand.—PENINSULAR: Songkhla [Rattaphum District, Khao Phra Subdistrict, Khao Luk Lom Mountain, 10 July 2020, *Leeratiwong 20-1734* (PSU); *ibid.*, 3 Mar. 2021, *Leeratiwong 21-1735* (BKF, KKU, PSU)].

Distribution.—Peninsular Malaysia, Singapore, Sumatra, Borneo (Sabah-type), Ceram.

Ecology.—Growing on edges or valley of dry evergreen forest where the soil is deep and damp, ca 350 m alt. Flowering: March; fruiting: July.

Vernacular.—Nom maeo noi (นมแมวน้อย) (Songkhla).

Note.—*Uvaria clementis* is similar to other Thai *Uvaria* species that also display yellow-green erect concave petals that do not reflex at maturity. The most distinctive diagnostic trait is the presence of vertical furrows/striations on the outer surface of the petals, prominent in dried specimens, a characteristic not seen in any other Asian species. Within Thailand, the flowers of this species are most similar to *U. wrayi* (King) L.L.Zhou, Y.C.F.Su & R.M.K.Saunders, however this species is distinguished from *U. clementis* by having larger petals (up to 9 mm long compared to 4.5 mm long in *U. clementis*) and larger bracts (up to 4 mm long compared to 2.5 mm in *U. clementis*). The monocarps of *U. clementis* are larger (up to 58 mm long) than in other *Uvaria* species with small green-yellow petals recorded in

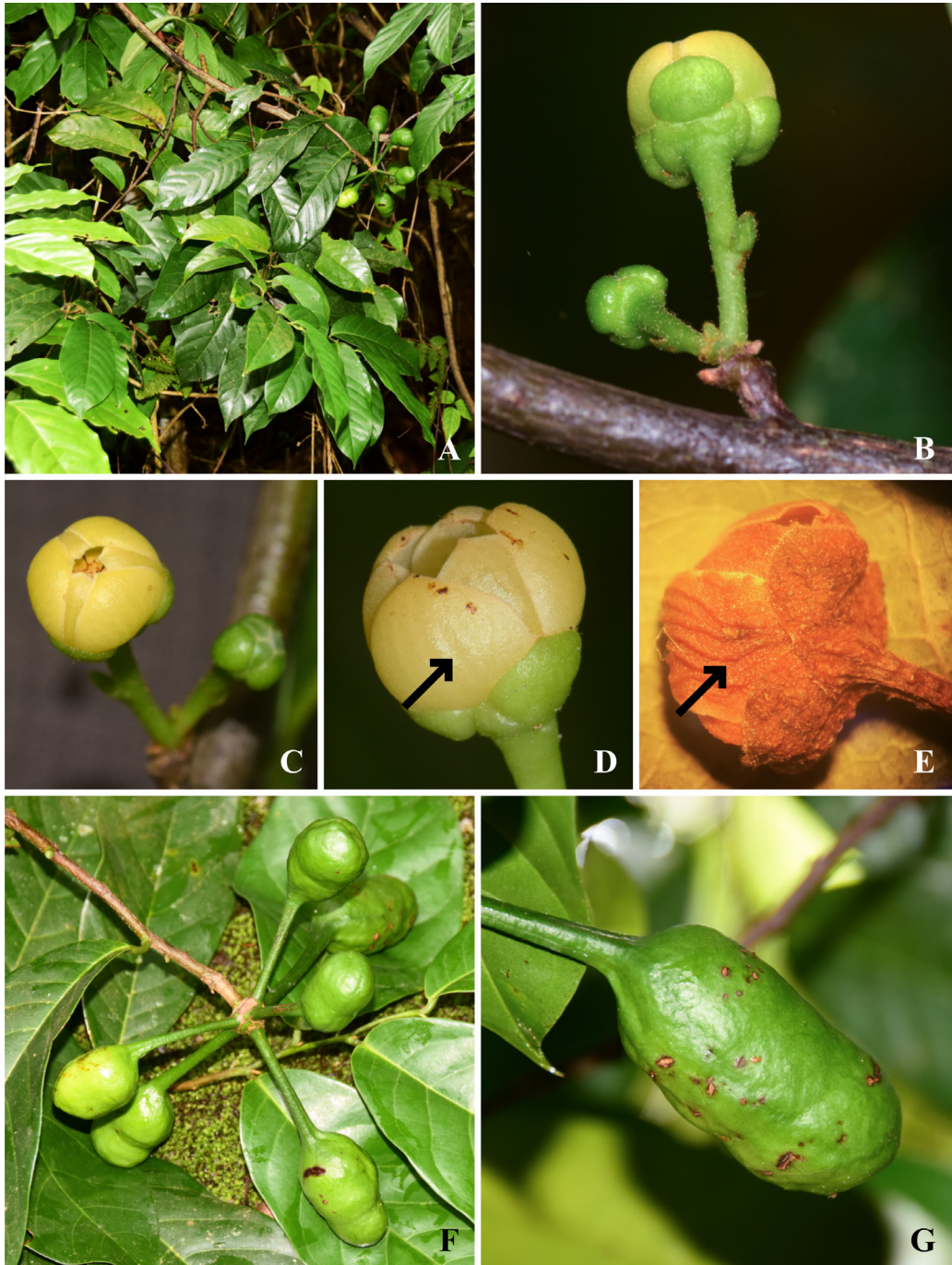


Figure 1. *Uvaria clementis* (Merr.) Attan., I.M. Turner & R.M.K.Saunders: A. fruiting branch; B. inflorescence; C. apical view of flowers; D. fresh flower showing outer petals with furrows on outer surface (arrow); E. dried flower showing outer petals with furrows on outer surface (arrow); F. young fruit; G. young monocarp. Photos by C. Leeratiwong; E. from *Leeratiwong 20-1734 (PSU)*.

Thailand (all of which display monocarps less than 25 mm long, including *U. tonkinensis* Finet & Gagnep., *U. micrantha* (A.DC.) Hook.f. & Thomson, *U. utteridgei* L.L.Zhou, Y.C.F.Su & R.M.K.Saunders, *U. wrayi* and *U. argentea* Blume), with the exception of *U. griffithii* L.L.Zhou, Y.C.F.Su & R.M.K.Saunders, which has monocarps of similar size to *U. clementis* but differs in having an elongate peduncle 20–50 mm in length, compared to <3.5mm in *U. clementis*. The Thai specimens of *U. clementis* differ a little from collections from neighbouring countries in having extra-axillary or leaf-opposed inflorescences with 1–3 flowers (vs only leaf-opposed inflorescences with 3–4 flowers) and also wider petals on the inner whorl, 4–4.5 mm (vs 2–3 mm).

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