

Burkilliodendron album (Fabaceae: Millettieae), a new genus and species record for Thailand

SAWAI MATTAPHA^{1,*} & CHARAN LEERATIWONG²

ABSTRACT

Burkilliodendron album is a new genus and species record for Thailand. The detailed description of the reproductive part of the species is emended based on the fleshy flowers. Photographs taken from the field are provided for easy identification.

KEYWORDS: *Fordia*, Leguminosae, Malesiana, *Millettia*, taxonomy.

Accepted for publication: 16 April 2021. Published online: 28 April 2021

INTRODUCTION

Burkilliodendron Sastry, regarded as a monotypic genus belonging to a polyphyletic tribe Millettieae, was incorrectly named *Burkillia* by Ridley (1925). It was later confirmed as *Burkilliodendron* by Sastry (1969). The genus consists of a single species, *B. album* (Ridl.) Sastry. It is generally characterised by having unifoliolate leaves, white flowers with a standard lacking basal callosities, monadelphous stamens, an ovary with two ovules, dehiscent flattened falcate fruits without wings, and seeds with a folded radicle.

The taxonomic position of *Burkilliodendron* has long been controversial. The studies of Dunn (1912) and Geesink (1984) supported an ambiguous position of *Burkilliodendron* occupying a transitional position between the Millettieae and Phaseoleae tribes. Adema (2000) concurred with Geesink (1984) to include *Burkilliodendron* in the Millettieae tribe as a distinct species not closely related to a unifoliolate form found in the genus *Fordia* Hemsl. which includes *F. albiflora* (Prain) Dasuki & Schot and *F. unifoliata* (Prain) Dasuki & Schot. Ultimately, Schrire (2005) placed *Burkilliodendron* tentatively in an informal group called basal millettoid & phaseoloid on the basis of molecular data of other related genera. Therefore, the phylogenetic position of the genus *Burkilliodendron* necessitates further study.

Only very few herbarium collections of *Burkilliodendron album* are known, so it appears to be very rare according to Adema (2000) and Schrire (2005). We found two collections of *B. album* from the deep south of Thailand, and we now know it as an additional genus and species record for the Flora of Thailand.

DESCRIPTION

Burkilliodendron album (Ridl.) Sastry, Bull. Bot. Surv. India 10: 243. 1969; Geesink, Leiden Bot. Ser. 8: 82, pl. IV-26. 1984; Adema, Gard. Bull. Singapore 52: 7, fig. 1. 2000.—*Burkillia album* Ridl., Fl. Malay Penins. 5: 305. 1925, **nom. illeg.**—*Alloburkillia alba* (Ridl.) Whitmore, Gard. Bull. Singapore 24: 4. 1969. Type: Peninsular Malaysia, Perak, *Burkill & Haniff 12493* (lectotype **K** [K000881082!], designated by Adema (2000); isolectotypes **K** [K000881080!], **SING** [0043123!]). Fig. 1.

Shrub 1–3 m tall. *Stems* brown, covered with hirsute hairs. *Leaves*: unifoliolate; stipules triangular to lanceolate, 4–7 × 0.5–1.5 mm, striate, apex acuminate, margin and outside hirsute, inside glabrous, persistent; stipels acicular, 1–2 mm long, caducous; lamina oblong-obovate, 9–22 × 3–8 cm, apex acuminate or cuspidate, base rounded to subcordate, margin entire, upper surface glabrous, with

¹ Department of Biology, Faculty of Science, Udon Thani Rajabhat University, Udon Thani 41000, Thailand.

² Department of Biology, Faculty of Science, Prince of Songkla University, Hat Yai, Songkhla 90112, Thailand.

* Corresponding author: Indigoferasawai@gmail.com

densely appressed hairs along veins, glossy, lower surface glabrous, moderately hairy along veins, netted-veins and areoles distinct; lateral veins 8–12 pairs, raised below; petiolules 3–5 mm long, densely hirsute. *Inflorescences* pseudoracemose or sometimes pseudopaniculate, in the latter case with a few branches, axillary and borne on old branches, 2–3 cm long, consisting of ca 20 flowers each, with hirsute hairs, slender; brachyblasts globular, with 1–2 flowers; bracts subtending brachyblasts narrowly triangular 1–1.5 × 0.4–0.5 mm, apex acuminate, margin and outside densely sericeous, inside glabrous, persistent; floral bracts subtending flowers and bracteoles similar to bracts, ca 1 × < 0.5 mm, inserted at top of pedicels; pedicels 4–5 mm long, pubescent. *Calyx* campanulate, green; tube 2–3 mm long, outside densely sericeous, inside glabrous; lobes 5, margin sericeous, both sides densely sericeous; dorsal lobes connate, minutely 2-toothed, ca 0.2 × 0.2 mm; lateral lobes 2, triangular, ca 0.8 × 1–1.5 mm; lowest lobe longest, broadly ovate, 0.9–1 × 1–1.5 mm. *Corolla* white; standard ovate-orbicular, 6–7 × 7–8 mm, apex acute, base tapering into the claw, margin entire, outside densely sericeous, inside glabrous, without basal callosities, claw ca 2 mm long; wings oblong, sinuous, 5–7 × 1.5–2 mm, auricle 0.2–0.5 mm long, apex rounded, margin entire, both sides glabrous, claw 1.5–2.5 mm long; keel boat-shaped, 5.5–6.5 × 3–3.5 mm, auricle 0.3–0.5 mm long, apex acute, base truncate, margin minutely sericeous or glabrous, outside sericeous at apex along mid vein, inside glabrous, claw 2–2.4 mm long. *Stamens* 10, monadelphous with basal fenestrae ca 1 mm long; staminal tube 5–6 mm long; filaments 2–3 mm long; anthers oblong, 0.8–1 × 0.3–0.5 mm. *Disc* annular. *Ovary* sparsely sericeous, 2-ovuled; style 2.5–2.8 mm long, sericeous in lower half, glabrous in upper part; stigma capitate. *Fruit* oblong, flat, slightly falcate, ca 7 × 1.5 cm, woody, without wings, moderately sericeous when young, dehiscent. *Seeds* 2, lens-shaped, ca 8 × 7 mm.

Thailand.—PENINSULAR: Yala [Tham Tha-Lu, Than To District, Bang Lang National Park, 6 Sept. 2018, *Leeratiwong et al.* 18-1147 (PSU); *ibid.*, near Yala Forest Fire control station, 6°12'94"N, 101°95'80"E, alt. 125 m, 17 July 2004, *Pooma et al.* 4307 (BKF)].

Distribution.— Peninsular Malaysia (Perak, type).

Ecology.— Evergreen forest, on limestone mountains, plants grow in shaded and moist areas, alt. ca 125 m. Flowering: July–September, fruiting: September–November.

Notes.— 1. The collection of *Leeratiwong et al.* 18-1147 (PSU) matches *Pooma et al.* 4307 (BKF) very well. A robust identification of these two collections was made to confirm that the species belongs to *Burkilliodendron album*, which is represented hereby as a new record for Thailand. Previous studies by Adema (2000) and Schrire (2005) found that it is a native to Perak (Peninsular Malaysia).

2. Both Geesink (1984) and Adema (2000) described the inflorescences of *Burkilliodendron album* as axillary pseudoracemes. However, our examination from a fresh collection confirms that the inflorescences are both axillary pseudoracemose and pseudopaniculate that are borne on old branches. Adema (2000) also described the fruits as glabrous, but our observations found that the fruits were moderately sericeous in the development stage. The size of fruits and seeds in our description was taken from Adema (2000).

ACKNOWLEDGEMENTS

The second author would like to thank the Plant Genetics Conservation Project under the Royal Initiation of Her Royal Highness Princess Maha Chakri Sirindhorn (RSPG) for financial support. Special thanks to Dr Jeffrey Nash for the English correction.

REFERENCES

- Adema, F. (2000). Notes on Malesian Fabaceae (Leguminosae-Papilionoideae) 6. The rare genus *Burkilliodendron*. Gardens' Bulletin Singapore 52: 5–10.
- Dunn, S.T. (1912). A revision of the genus *Millettia* Wight & Arn. Journal of the Linnaean Society of London, Botany 41: 123–243.
- Geesink, R. (1984). Scala Millettiearum: A survey of the genera of the Millettieae (Legum.-Pap.) with methodological considerations. Leiden Botanical Series 8. E. J. Brill / Leiden University Press, Leiden, 131 pp.

Ridley, H.N. (1925). The Flora of the Malay Peninsula. Volume 5. L. Reeve & Co., Ltd., London, pp. 304–305.

Sastry, A.R.K. (1969). *Burkilliodendron*—a new generic name in Fabaceae. Bulletin of the Botanical Survey of India 10: 243.

Schrire, B. (2005). Tribe Millettieae. In: G. Lewis, B. Schrire, B. Mackinder & M. Lock (eds), Legumes of the World. Royal Botanic Gardens, Kew, pp. 367–387.



Figure 1. *Burkilliodendron album* (Ridl.) Sastry: A. Flowering branch; B. close up of flowers; C. Young fruit. Photos by C. Leeratiwong.