THAI FOREST BULL., BOT. 53(2): 63–66. 2025.
DOI https://doi.org/10.20531/tfb.2025.53.2.08

# *Paraboea verticillata* (Gesneriaceae), a new record for Thailand

PHANOM SUTTHISAKSOPON[1,*], JUTATIP JUNEAD[1], WIPHUSINEE WORRACHOTTIYANON[2] & PRAMOTE TRIBOUN[3]

ABSTRACT

*Paraboea verticillata*, previously only known from Peninsular Malaysia, has been found on a limestone outcrop in Yala Province, Southern Thailand. The species is described and illustrated here.

KEYWORDS: Gesneriaceae, limestone, *Paraboea*, Thailand.

Accepted for publication: 18 July 2025. Published online: 13 August 2025

## INTRODUCTION

The genus *Paraboea* (C.B.Clarke) Ridl. (Gesneriaceae) comprises about 153 accepted species (GRC, 2025) and is widely distributed from northeastern and eastern India, the Himalayas, southern China, Myanmar, Thailand, Cambodia, Laos, Vietnam, Malaysia, Philippines and Indonesia as far east as Sulawesi (POWO, 2025). *Paraboea* is mainly found in limestone habitats which is often a challenging environment in which to collect and hence some species are insufficiently represented in herbaria for in-depth taxonomic studies (Johns, 1995; Middleton, 2003; Xu *et al.*, 2008). In Thailand, Xu *et al.* (2008) reported 32 species of *Paraboea*, 17 of which were endemic to the country. However, Xu *et al.* (2008) used a genus concept that was later considerably altered (Puglisi *et al.*, 2011, 2016). Extensive fieldwork carried out in recent decades has led to the discovery of many new species, most of them endemic to Thailand and the majority considered threatened to some degree (Kiew, 2010; Triboun & Middleton, 2012; Triboun, 2013; Triboun & Middleton, 2015; Puglisi & Phutthai, 2018). There has also been evidence of new records for Thailand but many areas still need to be explored. During the authors' fieldwork on the vegetation of the Wat Khuha Phimuk (Wat Tham, Yala Province, Peninsular Thailand) limestone outcrops in September 2020, *Paraboea verticillata* (Ridl.) B.L.Burtt was discovered, a species previously only recorded from Peninsular Malaysia (Xu *et al.*, 2008). The species was found as a single population growing on the summit of a limestone outcrop. This is the first record of this species for Thailand. There are now estimated to be more than 75 species in Thailand (Puglisi & Phutthai, 2018).

## TAXONOMIC TREATMENT

**Paraboea verticillata** (Ridl.) B.L.Burtt, Bot. J. Linn. Soc. 85: 25. 1982; Burtt, Notes Roy. Bot. Gard. Edinburgh 41: 440. 1984; Xu *et al.*, Edinburgh Journal of Botany 65: 332. 2008.— *Boea verticillata* Ridl., J. Linn. Soc., Bot. 32: 519. 1896. Type: Malay Peninsula, Selangor Gua Batu, limestone rocks at Kuala Lumpur, vii 1897 (fr, fl), *Kelsall s.n.* (lectotype **K**, designated by Xu *et al.*, 2008; isolectotype **BM**). Fig. 1A–C.

[1] Environmental Program, Faculty of Environmental Culture, Srinakharinwirot University, Bangkok 10110, Thailand.

[2] Department of Biology, Faculty of Science, Srinakharinwirot University, Bangkok 10110, Thailand.

[3] National Biobank of Thailand, National Science and Technology Development Agency, 111 Thailand Science Park, Khlong Nueng, Khlong Luang, Pathum Thani 12120, Thailand.

* Corresponding author: phanom@g.swu.ac.th


Figure 1. *Paraboea verticillata* (Ridl.) B.L.Burtt: A. Inflorescence with open flower, B. fruits, C. habit. Photos by P. Sutthisaksopon

Lithophytic perennial herb to subshrub, up to 60 cm tall; lower part of stem woody, 0.5–1 cm in diam., the basal internodes 0.5–2.5 cm long, the upper ones much longer up to 11 cm, covered with white matted indumentum when young and glabrescent when mature. *Leaves* in whorls of 3, rarely of 4; petiole 0.7–3.5 cm long; blades elliptic, narrowly obovate or oblanceolate, 4.5–15 × 1.5–5 cm, apex acute, base cuneate, margin crenate, upper surface sparsely covered with white arachnoid hairs, lower surface densely covered with whitish grey wooly indumentum; lateral veins (7–)12–14(–23) on each side of midrib, prominent on the lower surface, tertiary veins not visible. *Inflorescence* terminal, paniculate, with white matted indumentum throughout except on the floral parts; flowering stem 20–30 cm long, the lowest internodes (2–)6–10 cm long, inflorescence bracts gradually reducing in size from caulescent leaves upwards; 3 (rarely 4) short compound dichasia on each node; inflorescence

bracts narrowly ovate, the lowest one ca 5 mm long, floral bracts sepal-like; pedicels ca 1 cm long. *Calyx* of a short tube and 5 free lobes, lanceolate to ellipitic, 2–2.5 × 0.5–0.8 cm, outside sparsely covered with whitish matted indumentum, inside glabrous. *Corolla* blue to purple, rotate; tube ca 2 mm long; limb 2-lipped, upper lip 2-lobed, lobes subglobose, 3.5–5 × ca 4 mm, lower lip 3-lobed, ca 8 mm long, the lateral lobes widely ovate, ca 3 × 4 mm, the middle one rounded, ca 3 × 3.5 mm. *Stamens*: filaments geniculate, inserted at the corolla base with the free part ca 3 mm long, ciliate in the middle; anthers transversely ellipsoid, ca 2 × 4 mm, coherent to each other at the apex and the base, opening in the centre of the anther locules, apex turned towards the gynoecium, dorsifixed. *Ovary* creamy white, ovoid, ca 1.5 × 1.2 mm; style white with light purple at the upper part near stigma, ca 5 mm long; stigma capitate, light purple. *Fruits* narrowly cylindric, 2–3 × ca 0.2 cm, spirally twisted, glabrous.

Thailand.— PENINSULAR: Yala [Mueang Yala, Na Tham, Wat Khuha Phimuk, alt. 300 m, 5 Sept. 2020, *Sutthisaksopon & Romthong 751* (**BKF**)].

Distribution.— Peninsular Thailand and Peninsular Malaysia.

Habitat.— In Thailand in evergreen forest on hill top of a limestone outcrops at ca 300 m elevation (Fig. 2).

Phenology.— Flowering and fruiting between September and December.

Vernacular.— Cha Khuha Phimuk (ชาคูหาภิมุข) (Proposed here).

Notes.— The description above incorporates the new Thai material into the description as provided by Xu *et al.* (2008). In Thailand this species is only known from one locality in Yala Province which is not in a protected area and the population size is very small < 50 individuals.

Figure 2. Habitat of *Paraboea verticillata* (Ridl.) B.L.Burtt on the summit of Wat Khuha Phimuk (Wat Tham) limestone outcrops, Na Tham Subdistrict, Mueang Yala District, Yala Province. Photo by P. Sutthisaksopon.

## ACKNOWLEDGEMENTS

This study was financially supported by Faculty of Environmental Culture and Ecotourism, Srinakharinwirot University through Research Grant no. 455/2563. We are grateful to the Directors, Curators and staff of BK, BKF, E, K, KKU, QBG and SING. We thank Dr D.J. Middleton for kindly providing comments and suggestions for improving the manuscript.

## REFERENCES

GRC (2025). Gesneriaceae Resource Centre. Facilitated by the Royal Botanic Garden Edinburgh. Published on the Internet; https://padme.rbge.org.uk/GRC. Retrieved 19 April 2025.

Johns, R.J. (1995). Malesia – An Introduction. Curtis's Botanical Magazine 12: 52–62.

Kiew, R. (2010). Two new species of *Paraboea* (Gesneriaceae) from Peninsular Malaysia and Thailand. Edinburgh Journal of Botany 67(2): 209–217.

Middleton, D.J. (2003). Progress on the Flora of Thailand. Telopea 10: 33–42.

Puglisi, C. & Phutthai, T. (2018). A new species of *Paraboea* (Gesneriaceae) from Thailand. Edinburgh Journal of Botany 75(1): 51–54.

Puglisi, C., Middleton, D.J., Triboun, P. & Möller, M. (2011). New insights into the relationships between *Paraboea*, *Trisepalum*, and *Phylloboea* (Gesneriaceae) and their taxonomic consequences. Taxon 60(6): 1693–1702.

Puglisi, C., Yao, T.L., Milne, R., Möller, M. & Middleton, D.J. (2016). Generic recircumscription in the Loxocarpinae (Gesneriaceae), as inferred by phylogenetic and morphological data. Taxon 65(2): 277–292.

POWO (2025). Plants of the World Online. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; https://powo.science.kew.org/ Retrieved 28 January 2025.

Triboun, P. (2013). *Paraboea middletonii* (Gesneriaceae), a new species from Thailand. Thai Forest Bulletin (Botany) 41: 45–47.

Triboun, P. & Middleton, D.J. (2012). Twenty new species of *Paraboea* (Gesneriaceae) from Thailand. Gardens' Bulletin Singapore 64(2): 333–370.

Triboun, P. & Middleton, D.J. (2015). Three new species of *Paraboea* (Gesneriaceae) from Thailand. Thai Forest Bulletin (Botany) 43: 18–23.

Xu, Z., Burtt, B.L., Skog, L.E. & Middleton, D.J. (2008) A revision of *Paraboea* (Gesneriaceae). Edinburgh Journal of Botany 65: 161–347.