

A new species of *Paraboea* (Gesneriaceae: Didymocarpoideae) from Myanmar

D.J. Middleton

Singapore Botanic Gardens, National Parks Board,
1 Cluny Road, Singapore 259569, Singapore
davidmiddletonsing@gmail.com

ABSTRACT. The new species *Paraboea babae* D.J.Middleton from Shan State in Myanmar is described and illustrated.

Keywords. Alternate leaves, limestone, trisepaloid calyx

Introduction

The genus *Paraboea* (C.B.Clarke) Ridl. in the Gesneriaceae, subfamily Didymocarpoideae, tribe Trichosporeae, subtribe Loxocarpinae (Puglisi et al., 2016; Weber et al., 2020) is one of the largest genera in the family with about 130 species (Middleton, 2018). It is distributed in Myanmar, southern China, Thailand, Peninsular Malaysia, Borneo, Sumatra, the Philippines and Sulawesi. The single species of *Paraboea* recorded from India has now been transferred to *Middletonia* C.Puglisi (Puglisi et al., 2016). The genus has grown very rapidly in recent years due to the synonymisation of *Trisepalum* C.B.Clarke and *Phylloboea* Benth. (Puglisi et al., 2011) and due to the description of large numbers of new species from across its distribution, particularly from Thailand (Triboun & Middleton, 2012, 2015; Triboun, 2013; Puglisi et al., 2015; Puglisi & Phutthai, 2017; Kaitongsuk et al., 2021).

In Myanmar, nine species were recorded by Kress et al. (2003) and eight by Xu et al. (2008), but in both cases older generic concepts were being used. With the addition of recorded species of *Trisepalum* and *Phylloboea* and the removal of species now in *Middletonia* (Puglisi et al., 2011), and allowing for synonymy and insufficiently known species, 13 species of *Paraboea* are currently recorded for Myanmar (Appendix 1). As neighbouring Thailand has in the region of 75 species (Puglisi & Phutthai, 2017), there are very likely to be many more known and undescribed species yet to be found in Myanmar, particularly in eastern and southern regions.

The large majority of *Paraboea* species have opposite or whorled leaves but a small number of species such as *Paraboea lancifolia* (Ridl.) B.L.Burt, *P. rabilii* Z.R.Xu & B.L.Burt, *P. suffruticosa* (Ridl.) B.L.Burt and *P. velutina* (W.T.Wang & C.Z.Gao) B.L.Burt have been documented as having alternate leaves (Xu et al., 2008). A *Paraboea* specimen collected in Shan State of Myanmar in 2015 with alternate leaves has been compared to the alternate- and opposite-leaved species and it has been concluded that it is an undescribed species. The terminology used here follows Xu et

al. (2008). The global conservation categories and criteria follow the IUCN Standards and Petitions Committee (2022).

Taxonomic treatment

***Paraboea babae* D.J.Middleton, sp. nov.**

Similar to *Paraboea swinhoei* (Hance) B.L.Burt in the elongated stem, numerous lax and axillary inflorescences and the terminal panicle, but differing in the alternate leaf arrangement (vs opposite in *P. swinhoei*), 3-lobed calyx (vs 5-lobed in *P. swinhoei*) and lingulate stigma (vs capitate to 2-lobed in *P. swinhoei*). Also similar to *Paraboea lancifolia* (Ridl.) B.L.Burt in the alternate leaves and terminal inflorescence but differs in the glabrous pedicels and calyx (vs matted indumentum in *P. lancifolia*), 3-lobed calyx (vs 5-lobed in *P. lancifolia*) and lingulate stigma (vs capitate in *P. lancifolia*). Differs from all species of *Paraboea* with a 3-lobed calyx (i.e., the former genus *Trisepalum*), in the alternate leaf arrangement and in the elongated stem, numerous axillary lax inflorescences and the terminal panicle (vs generally short stem and fewer more congested and subterminal inflorescences). – TYPE: Myanmar, Shan State, Pinglong Township, Paunglang Reserve Forest, Lein Le Village, Pyar Taung, 947 m, 13 September 2015, *Baba, Kertsawang, Kilgour, Puglisi, Rodda, Srisanga, Thant Shin & Phyu Hnin 103148* (holotype SING [SING0370335]; isotypes E, MBK, QBG, RAF). (Fig. 1, 2)

Cauliscent lithophytic shrubby herb to 1 m tall with distinct internodes; stems densely covered in a matted indumentum and wispier arachnoid hairs. **Leaves** alternate; petioles 0.7–7.3 cm long (see notes below), deeply grooved above, base slightly amplexicaul and with a distinct line part way round the stem, with a dense matted indumentum; lamina coriaceous, elliptic, 4–22.2 × 2.1–6.5 cm (see notes below), apex acuminate, base obtuse to cuneate, 9–12 secondary veins on each side of midrib, slightly sunken above, raised beneath, tertiary venation reticulate, above with sessile glands and a sparse arachnoid indumentum which is denser along the midrib, beneath with sessile glands and a dense matted indumentum. **Inflorescences** axillary and terminal, the whole forming a large lax terminal panicle, each inflorescence dichasial and 1–3 times branched, branching opposite, individual inflorescences 12–18 cm long; peduncles 4.5–7.5 cm long, matted pubescence at base, becoming glabrescent distally; bracts orbicular, deeply bowl-shaped, with minute sessile glands, 3–4 mm long; pedicels 6–22 mm long, glabrous. **Calyx** 3-lobed, all lobes cupular, lower 2 lobes elliptic, c. 3.7 × 1.7 mm, apices rounded, with sessile glands, upper lobe orbicular, apex rounded, c. 4.3 × 4 mm, with sessile glands. **Corolla** purple, campanulate, c. 11.5 mm long, outside with sessile glands at base on lower lip, otherwise glabrous, inside with sessile glands, upper lip 2-lobed, lower lip 3-lobed, all lobes orbicular, apices rounded; tube c. 6 mm long to sinus between upper and lower lips; upper lobes c. 4 × 7.5 mm, lateral lobes c. 3.7 × 5.5 mm, lower lobe c. 3.5 × 5 mm. **Stamens** inserted in tube at c. 1.5 mm from corolla base; filaments c. 2.5 mm long, glabrous; anthers connate by their apices,

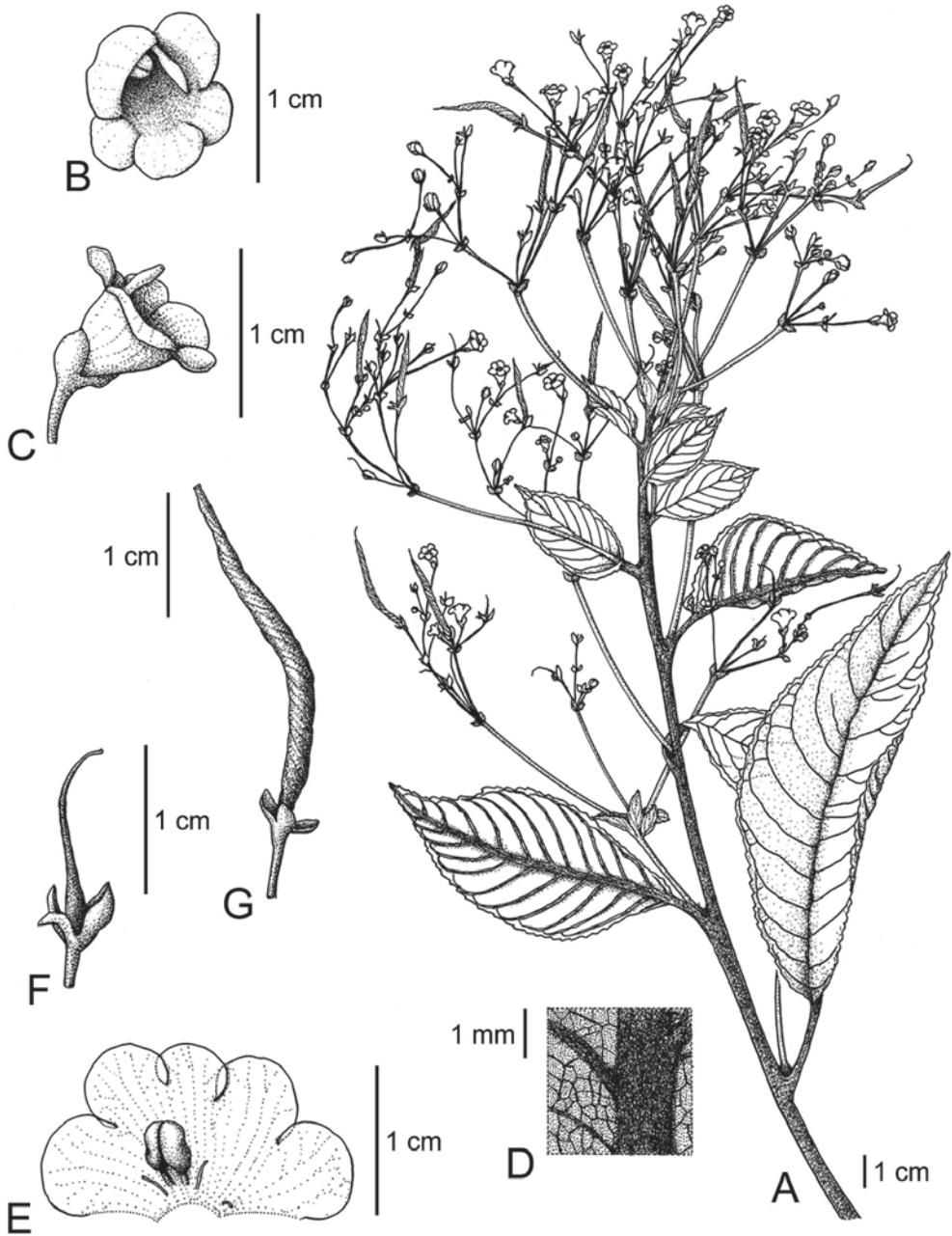


Fig. 1. *Paraboea babae* D.J.Middleton. **A.** Habit. **B.** Flower, front view. **C.** Flower, semi-side view. **D.** Abaxial surface of leaf. **E.** Dissected flower. **F.** Gynoecium with calyx. **G.** Fruit. Drawn from the holotype by Evonne Koh.



Fig. 2. Habit of *Paraboea babae* D.J.Middleton. (Photo: Yumiko Baba)

c. 3 × 4.5 mm; lateral staminodes c. 2.2 mm long, medial staminode c. 1.1 mm long. **Nectary** annular, c. 0.1 mm high. **Ovary** glabrous, c. 3 mm long, c. 1.3 wide; style c. 4 mm long, style lingulate. **Fruit** a twisted capsule, 2.4–4 cm long, 2–2.5 mm wide, glabrous.

Distribution. Only known from the type collection.

Habitat and ecology. Lithophytic on exposed limestone in semi-evergreen forest.

Etymology. *Paraboea babae* is named after Dr Yumiko Baba, the lead collector of the type.

Provisional IUCN conservation assessment. Data Deficient (DD). The plant was collected within a protected area but the distribution of the species and the size of the population(s) are unknown.

Notes. The dimensions given for the petioles and laminas in the description are from the herbarium specimens seen. However, the specimens are primarily composed of the inflorescences and leaves only from the upper part of the plant, thereby lacking the somewhat larger leaves that can be seen in Fig. 2 in the basal part of the plant.

Paraboea babae has a calyx and stigma shape typical of the species formerly placed in the genus *Trisepalum*. However, it is easily distinguished from all other trisepaloid species in the elongated stem and alternate leaf arrangement.

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Appendix 1. List of *Paraboea* taxa previously recorded from Myanmar by Xu et al. (2008) and Puglisi et al. (2011). Additional *Paraboea* taxa in Kress et al. (2003) not accounted for here are due to misidentifications or synonymy.

- Paraboea acuta* (C.B.Clarke) C.Puglisi
- Paraboea amplexicaulis* (Parish ex C.B.Clarke) C.Puglisi
- Paraboea birmanica* (Craib) C.Puglisi
- Paraboea glanduliflora* Barnett
- Paraboea glandulosa* (B.L.Burtt) C.Puglisi
- Paraboea glutinosa* (Hand.-Mazz.) K.Y.Pan
- Paraboea neurophylla* (Collett & Hemsl.) B.L.Burtt
- Paraboea obtusa* (C.B.Clarke) C.Puglisi
- Paraboea prazeri* (B.L.Burtt) C.Puglisi
- Paraboea proluxa* (C.B.Clarke) B.L.Burtt
- Paraboea rufescens* (Franch.) B.L.Burtt var. *tomentosa* (Barnett) Z.R.Xu
- Paraboea sinensis* (Oliv.) B.L.Burtt
- Paraboea swinhoei* (Hance) B.L.Burtt