

Taeniophyllum baumei B.Gray (Orchidaceae), a new species from Cape York Peninsula, Queensland

B. Gray

Summary

Gray, B. (2018). *Taeniophyllum baumei* B.Gray (Orchidaceae), a new species from Cape York Peninsula, Queensland. *Austrobaileya* **10(2)**: 260–265. *Taeniophyllum baumei* B.Gray, a new species closely related to *T. muelleri* Lindl. ex Benth. but differing on floral characteristics, is described and illustrated. The new species is restricted to northern Cape York and the McIlwraith Range on Cape York Peninsula in Queensland, where it is relatively common in various forest types.

Key Words: Orchidaceae, *Taeniophyllum*, *Taeniophyllum baumei*, Australia flora, Queensland flora, Cape York, McIlwraith Range, new species, taxonomy, identification key

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Introduction

A survey of mainland Australian *Taeniophyllum* was conducted recently and a total of nine species were recorded, including four new species (Gray 2015, 2017). However, another recent collection made by David Baume in 2015 from northern Cape York has shown yet another distinct species exists. Although closely resembling *T. muelleri* Lindl. ex Benth., a widespread species of the east coast of Queensland and New South Wales (Jones *et al.* 2018), certain floral characteristics of Baume's specimen differ significantly to those of *T. muelleri*. The taxonomy of *T. muelleri* was revisited and it was discovered that all northern Cape York Peninsula *Taeniophyllum* collections previously identified as *T. muelleri* were in fact the same as David Baume's specimen.

This new Cape York Peninsula *Taeniophyllum* is here described as *T. baumei* (Fig. 1). A revised key to the mainland Australian *Taeniophyllum* is provided.

Materials and methods

This study is based on living plants observed in the field, as well as herbarium specimens including spirit collections deposited in BRI, CANB and CNS (herbaria acronyms follow Thiers (continuously updated)). All measurements of floral parts were made from spirit material. An illustration depicting the inflorescences of *Taeniophyllum baumei* and *T. muelleri* is provided for comparison purposes, (Fig. 2), as well as photographs of the two species observed in the field (Figs. 3 & 4).

Taxonomy

Key to mainland Australian *Taeniophyllum* species (revised from Gray 2015)

- 1 Sepals and petals fused near the base forming a tube; flowers <3 mm diameter 2
- 1. Sepals and petals free to the base not forming a tube; flowers >3 mm diameter 6
- 2 Roots triangular or flattened in cross section 3
- 2. Roots terete in cross section 9

- 3 Roots triangular in cross section (having a raised longitudinal ridge) . . . **T. triquetroradix**
3. Roots flattened in cross section **4**
- 4 Peduncle not filiform, roots 2–3 mm broad; floral bracts overlapping, hiding the rachis; flowers 4–5 mm long **T. confertum**
4. Peduncle filiform, roots 1–1.5 mm broad; floral bracts not overlapping; flowers 2–2.5 mm long **5**
- 5 Roots 1–1.5 mm broad; peduncle 12–15 mm long; rachis filiform; floral bracts small, alternating 0.5 mm apart, all in one plane; flowers *c.* 2.5 mm long **T. explanatum**
5. Roots up to 1 mm broad; peduncle 2–5 mm long; rachis not filiform, fleshy, parallel sided, twice as wide as peduncle; floral bracts alternating less than 0.5 mm apart; flowers <2 mm long **T. clementsii**
- 6 Peduncle, rachis and ovary sparsely covered with erect short-bristly hairs; flowers green, turning yellow with age **T. lobatum**
6. Peduncle, rachis and ovary glabrous **7**
- 7 Peduncle filiform, 20–50(60) mm long; floral bracts overlapping; flower 7–11 mm wide; roots 1.5–2.5 mm broad, mostly hanging free from host, some appressed **T. malianum**
7. Peduncle not filiform **8**
- 8 Roots greyish green, flat in cross section, 2–3.5(–4) mm broad; peduncle and rachis reddish, zig-zag from the base, 8–10 mm long; floral bracts alternating 2–3 mm apart; flower 4.5–5 mm wide **T. epacridicola**
8. Roots green, ± terete in cross section, 1.5–2.1 mm diameter; peduncle up to 1 mm long, floral bracts overlapping hiding the rachis; flower *c.* 4.5 mm wide **T. walkeri**
- 9 Inflorescence with 4–8(–9) flowers, self-pollinating; somewhat sparsely arranged flowers, 1.7–3 mm apart **T. muelleri**
9. Inflorescence with 6–20(–more) flowers, not self-pollinating; somewhat tightly arranged flowers, 0.8–1.5 mm apart **T. baumei**

Taeniophyllum baumei B.Gray **sp. nov.** Similar to *T. muelleri* Lindl. ex Benth. but differs in having inflorescences with 6–20(–more) flowers (versus 4–8(–9) flowers in *T. muelleri*), flowers tightly arranged (0.8–1.5 mm apart) (versus flowers sparsely arranged (1.7–3 mm apart) in *T. muelleri*), and non-self-pollinating flowers (versus self-pollinating flowers in *T. muelleri*). **Typus:** Queensland. COOK DISTRICT: Wasp Creek north of Bamaga, 1 July 2015, *D.F. Baume DFB55* (holo: BRI [1 sheet + spirit]; iso: CNS).

Plants epiphytic, single or in colonies. **Roots** several, 15–60 mm long, round in cross section 0.8–1 mm diameter, green. **Inflorescences** filiform, peduncle 4–8 × 0.3–0.4 mm with 1–3 bracts. **Rachis** increasing in length as

flowering progresses, producing 9–20 or more flowers one at a time over several weeks; buds, flowers and capsules can be present at the same time. **Floral bracts** acute, alternate, 0.7–0.9 mm long, 0.8–1.5 mm apart and all in one plane. **Flowers** opening singly, *c.* 3 mm long including the spur and *c.* 2.2 mm across when open, pale green. **Sepals** and **petals** connate at the base into a short tube 0.5–0.8 mm long then spreading. **Dorsal sepal** narrowly lanceolate, *c.* 1.5 × 0.5 mm. **Lateral sepals** linear to slightly falcate, *c.* 1.5 × 0.6 mm. **Petals** lanceolate, *c.* 1.5 × 0.7 mm, apex acuminate. **Labellum** cymbiform, narrowly triangular, 1.8–1.9 × *c.* 0.5 mm, channel deepest at the base, apex acute with an erect spur *c.* 0.5 mm long. **Spur** subglobose, flattish

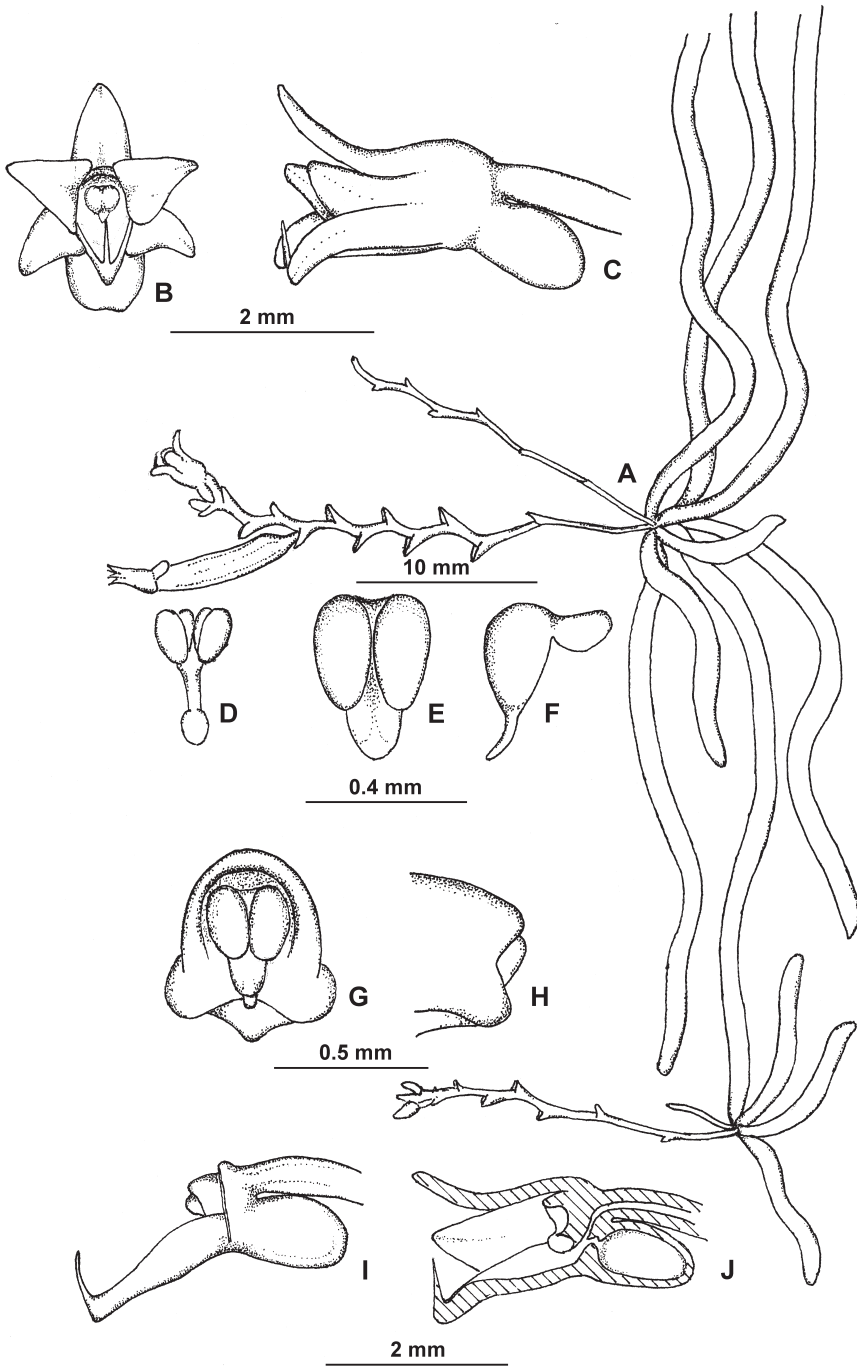


Fig. 1. *Taeniophyllum baumei*. A. habit of mature flowering plant. B. face view of flower. C. lateral view of flower. D. pollinium. E. face view of anther. F. lateral view of anther. G. face view of column. H. lateral view of column. I. lateral view of labellum and column. J. longitudinal section through flower. All from *Baume DFB55* (CNS, isotype). Scale as indicated. Del. B. Gray.

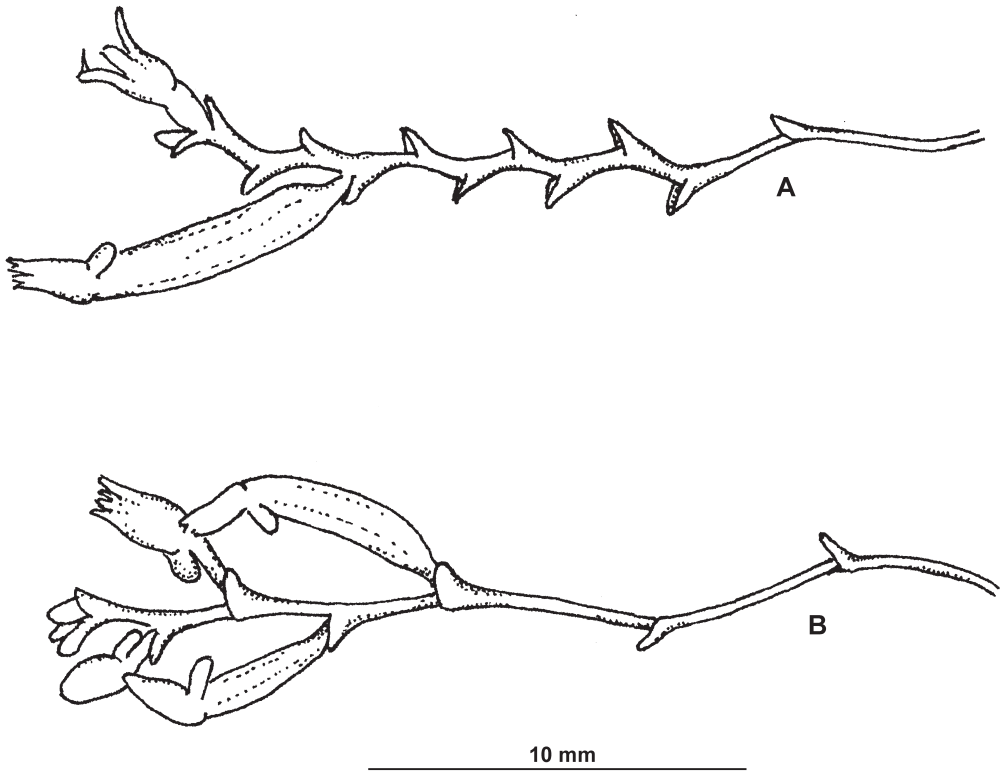


Fig. 2. Lateral view of inflorescences of A. *Taeniophyllum baumei* and B. *T. muelleri*. A from Gray BG9795 (CNS); B from Gray BG9661 (CNS). Scale as indicated. Del. B. Gray.

on the underside, 0.9–1 mm. **Column** domed, *c.* 0.6 × 0.5 mm. **Anther cap** 0.35–4 × *c.* 0.3 mm. **Pollinia** 4 in two pairs, yellow. **Capsule** linear 6–7 × 2–2.5 mm. **Figs. 1, 2A, 3.**

Additional specimens examined: **Australia. Queensland.** COOK DISTRICT: Punsand Bay, Cape York, Sep 1989, Gray 5116 (CNS); Adjacent to Laradenia Creek north of Bamaga, Sep 2017, Gray 9794 & Nowochatko (CNS); Mt Tozer, Jul 1986, Collins 20151 (CNS); Foot of Garraway Range, Sep 2017, Gray 9796 & Nowochatko (CNS); McIlwraith Range, Leo Creek Mine Road, Nov 1985, Gray 4243 (CNS); McIlwraith Range, Leo Creek Mine Road, Sep 2017, Gray 9802 *et al.* (CNS); Pandanus Creek, McIlwraith Range E of Coen, Jul 1978, Clarkson 2453 (BRI); Klondike Mine Road, S end of McIlwraith Range, Dec 2001, Gray 7921 (CNS).

Distribution and habitat: *Taeniophyllum baumei* is presently known to occur from the tip of Cape York, to as far south as the McIlwraith Range (**Map 1**). Specimens have been collected in Ericaceae dominated scrubs and both outside and inside rainforest margins at elevations from sea level to over 400 m.

Phenology: Flowering and fruiting has been recorded between April and December.

Notes: *Taeniophyllum baumei* was previously confused with *T. muelleri*, a widespread species occurring from the Wet Tropics in northern Queensland to northern New South Wales.



Fig. 3. Flowering and fruiting plant of *Taeniophyllum baumei* (Gray BG9795, CNS).



Fig. 4. Flowering and fruiting plant of *Taeniophyllum muelleri* (Gray BG9661, CNS).

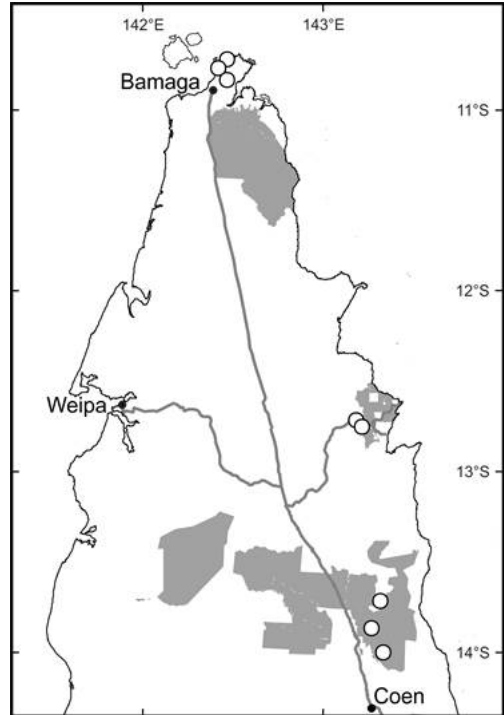
Etymology: The species is named after David Baume, collector of the type material who brought my attention to this remarkable plant.

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References

- GRAY, B. (2015). Three new species of *Taeniophyllum* Blume (Orchidaceae) from northern Queensland. *Austrobaileya* 9: 382–392.
- (2017). *Taeniophyllum walkeri* B.Gray (Orchidaceae), a new species from north Queensland. *Austrobaileya* 10: 65–69.
- JONES, D.L., HOPLEY, T. & DUFFY, S.M. (2018). *Australian Tropical Rainforest Orchids, ver. 1.1*. CSIRO. <https://keys.trin.org.au/key-server/data/08090a09-0d0e-410b-860c-020705070e0e/media/Html/index.htm>, accessed on 8 June 2018.
- THIERS, B. (continuously updated). *Index Herbariorum: A global directory of public herbaria and associated staff*. New York Botanical Garden's Virtual Herbarium. <https://sweetgum.nybg.org/ih/>, accessed on 11 June 2018.



Map 1. Distribution of *Taeniophyllum baumei*.