

Taeniophyllum cylindrocentrum Schltr. (Vandaeae: Orchidaceae) – a new record for Australia

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Summary

Clements, M.A., Clarkson, J.R., Zimmer, H.C. & Jones, D.L. (2021). *Taeniophyllum cylindrocentrum* Schltr. (Vandaeae: Orchidaceae) – a new record for Australia. *Austrobaileya* **11**: 118–123. A specimen collected during the 1978 Australian Orchid Foundation expedition to the McIlwraith Range, Cape York Peninsula, Queensland is identified as *Taeniophyllum cylindrocentrum* Schltr. This is the first record for this species in Australia. The identification key to Australian *Taeniophyllum* is updated to include this species.

Key Words: Orchidaceae; *Rhynchanthera*; *Taeniophyllum*; *Taeniophyllum cylindrocentrum*; Australia flora; Queensland flora; McIlwraith Range; new species record

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Introduction

Taeniophyllum Blume is a genus of leafless epiphytic orchids within tribe Vandaeae, subtribe Aeridinae. The genus *Taeniophyllum* encompasses approximately 236 species, 13 of which occur in Australia, including Norfolk and Christmas Islands (Jones 2021); the others in Asia, Malesia including New Guinea, Solomon Islands, south Pacific islands as far east as the Austral Islands, New Caledonia and New Zealand (Wood 2014).

Upon returning a long overdue loan from the Queensland Herbarium (BRI), a collection held in spirit as *Taeniophyllum* sp. was re-determined by the senior author as *Taeniophyllum cylindrocentrum* Schltr. The material was originally collected by one of the authors (Clarkson 2436, BRI) on an *Australian Orchid Foundation* sponsored field expedition in 1978 to the McIlwraith Range in Cape York Peninsula (Lavarack 1980, 2011). The specimen was one of three species of that genus collected during the trip. It is only the second confirmed collection of this species and the first from Australia. As

such, it must be considered as rare, although we acknowledge the possibility that further yet-identified collections may have been made, especially from New Guinea.

Taeniophyllum cylindrocentrum was first described by Rudolf Schlechter from material collected during one of his expeditions to the region in northeast New Guinea then known as German New Guinea or Kaiser-Wilhelmsland (Schlechter 1911–1914). *Taeniophyllum cylindrocentrum* was one of 63 new species of *Taeniophyllum* that Schlechter discovered, described or recognised from New Guinea. Schlechter placed this species in subgenus *Eu-Taeniophyllum*, section *Rhynchanthera* Schltr., a group with an undivided labellum and distinctly beaked anther, as well as glabrous peduncles and ovaries (Schlechter in Blaxell 1982).

Taeniophyllum section *Rhynchanthera* comprises more than 20 species, 18 of which are distributed in New Guinea (Schlechter 1911–1914). This section includes *T. malianum* Schltr., a species commonly encountered in

the rainforests of the McIlwraith Range and Iron Range of Cape York Peninsula (Lavarack 2011). Schlechter (1911–1914) noted that the section, and some unique species therein (such as the large-flowered *T. macranthum* Schltr.), was easily recognisable overall, based on possession of tangled root masses mostly growing in the air. However, he also noted that species delimitation within the section was difficult, even with careful examination of the flowers – although root morphology appeared constant for each species.

This record of *Taeniophyllum cylindrocentrum* brings the number of species in this genus found in Australia and its island territories to 13. This is in addition to the five new *Taeniophyllum* species recently described by Gray (2015, 2017, 2018). The English translation of the original description and Schlechter's (1923–1928) illustration (**Fig. 1**) of the *T. cylindrocentrum* species are presented here.

Taxonomy

Taeniophyllum cylindrocentrum Schltr., *Repert. Spec. Nov. Regni Veg. Beih.* 1: 1019–1020 (1913). **Type citation:** “Kaiser-Wilhelms-Land: Auf Bäumen in den Wäldern des Kani-gebirges, c. 600 m ü. d. M. – R. Schlechter no. 17873, blühend im Juni 1908.” **Type:** Kaiser-Wilhelms-Land: On trees in the forest of the Kani Range, alt. c 600 m – R. Schlechter no. 17873, flowering in June 1908 (holo: B†) (Schlechter in Blaxell 1982).

Epiphytic, leafless, very slender; roots slightly flattened, flexuose, 1.25 mm wide, to 25 cm long, mostly hanging free from host, some appressed. Inflorescence densely several- to many-flowered, tooth-like; including the hair-like peduncle to 6 cm long. Floral bracts deltoid, apiculate, much shorter than the ovary. Flowers opening in succession, glabrous. Sepals oblong-ligulate, obtuse, 30 mm long. Lateral sepals oblique. Petals similar to the sepals but somewhat shorter, oblique. Labellum very broadly ovate, as long as the petals, narrowed towards the apex and with swollen margins, subobtuse, in the middle

with a cuneate pit; spur cylindrical, obtuse, as long as the lip. Column very short, thick; rostellum hammer-shaped. Anther ovate-cucullate, long rostrate; pollinia obliquely obovoid; stipe very slender, widened towards the apex; viscidium linear-lanceolate, large. Ovary subsessile, glabrous, 30 mm long (after Schlechter in Blaxell 1982).

Distribution and habitat: *Taeniophyllum cylindrocentrum* is known from two locations, one in northeast Papua New Guinea and other in the McIlwraith Range, Cape York Peninsula, Queensland, Australia. At the Australian location, this orchid occurs as a small twig epiphyte in low shrubs on the margins of rainforest.

Notes: The holotype for this name was destroyed and no isotypes are known.

The original protologue and illustration (Schlechter 1911–1914) provide a thorough description of the species. Lectotypification using an herbarium specimen would bring additional value to an augmented description, not least the possibility of genetic sampling.

Taeniophyllum cylindrocentrum can be distinguished from its congeners by the combination of its distinctly broad labellum and the cylindrical shape of the spur, after which it is named; the flowers are white-yellow (Schlechter in Blaxell 1982). To facilitate the identification of *T. cylindrocentrum*, a colour illustration (**Fig. 2**) was prepared by the artist Cheryl Hodges based on the McIlwraith Range collection, Schlechter's description, illustration and notes particularly with reference to flower colour and the comparison to living plants of the related *T. malianum*.

Little is known about the ecology or biology of *Taeniophyllum cylindrocentrum*. Unlike the related species *T. malianum*, which has a prominent nectiferous spur and attracts mosquito-like species that can affect pollination, the spur of *T. cylindrocentrum* is relatively short and uniformly narrow, suggesting a different pollinator is attracted.

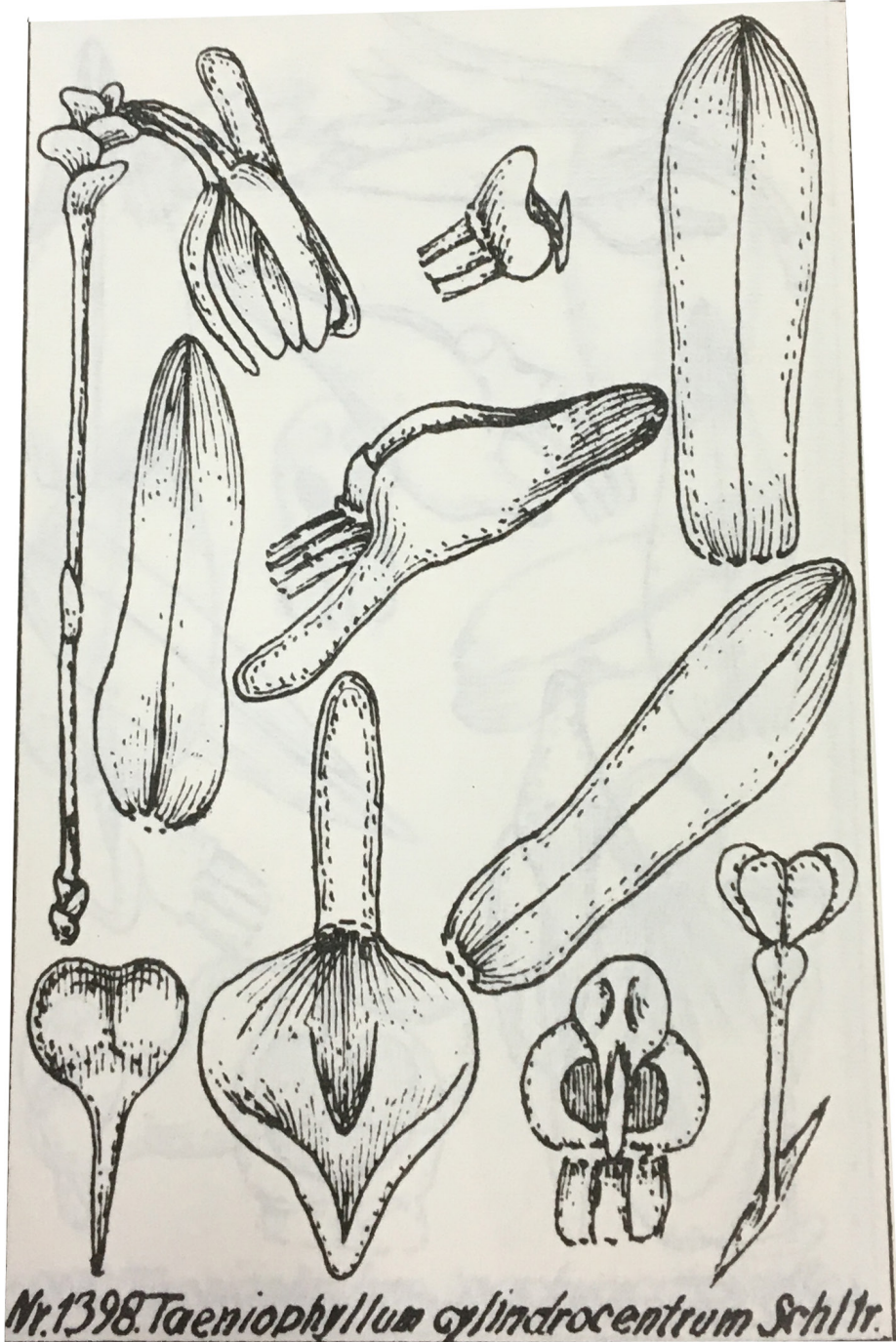


Fig 1. Schlechter's (1923–1928) original drawing of *Taeniophyllum cylindrocentrum*.

Key to mainland Australian *Taeniophyllum* species (revised from Gray 2018)

- 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 10
- 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 alternating *c.* 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 < 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, roots, mostly hanging free from host, some appressed. 8
7. Peduncle not filiform, roots mostly appressed to host 9
- 8 Roots flat in cross-section, green or grey; labellum spur widening near apex **T. malianum**
8. Roots oval-shaped in cross-section; labellum spur uniformly cylindrical. **T. cylindrocentrum**
- 9 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**
9. Roots green, ± terete in cross section, 1.5–2.1 mm broad; peduncle up to 1 mm long, floral bracts overlapping hiding the rachis; flower *c.* 4.5 mm wide. **T. walkeri**
- 10 Inflorescence with 4–8(–9) flowers, self-pollinating; sparsely arranged flowers, 1.7–3 mm apart **T. muelleri**
10. Inflorescence with 6–20(–more) flowers, not self-pollinating; tightly arranged flowers, 0.8–1.5 mm apart **T. baumei**



Fig. 2. *Taeniophyllum cylindrocentrum*. Plant; open flower front view and side view; root showing cross-section. From (mostly) Clarkson 2436 (BRI). Del. Cheryl Hodges.

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