Nuytsia
The journal of the Western Australian Herbarium

Volume 37: 45–50
Published: 6 March 2026
https://doi.org/10.58828/nuy01110

A new desert mountain endemic from central Australia: *Hysterobaeckea oreophila* (Myrtaceae: Chamelaucieae)

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SHORT COMMUNICATION

The Macdonnell Ranges of central Australia have a higher proportion of endemic plant species than other desert regions of the continent (Crisp *et al.* 2001; McDonald *et al.* 2021). They include Mt Zeil (*Urlatherrke* in the local Western Arrernte language), which is the highest peak west of the Great Dividing Range of eastern Australia. A small-flowered myrtaceous plant known only from upper parts of Mt Zeil was recognised as a distinct species of *Hysterobaeckea* (Nied.) Rye and allocated the phrase name *H.* sp. Mt Zeil (D.E. Albrecht 8650) in Rye (2018) but was not described due to the lack of flowering material. After two unsuccessful attempts to obtain material suitable for a type collection, specimens in early flower were finally secured in October 2025, enabling its formal description as *H. oreophila* Albr. & Rye.

Methods and materials

The species description, which follows the format of Rye (2018), is based on specimens housed at NT and PERTH. Dried material was used for leaf measurements, whilst floral character observations and measurements were based on spirit and rehydrated material. Leaf length was recorded for the largest leaves on each specimen, and the blade width and thickness were measured at the broadest point. Style length included the distance down to its deeply inset base and was taken from fruits or the most mature flowers seen; however, the type material has mostly flower buds and very recently opened flowers.

Taxonomy

Hysterobaeckea oreophila Albr. & Rye, *sp. nov*.

Typus: Mount Zeil, 240 m ESE of trig, Tjoritja/West MacDonnell Range National Park, Northern Territory, 27 October 2025, *D.E. Albrecht* 17115 *& A.T. Webb* (*holo*: NT D0296665; *iso*: CANB, DNA, K, NSW, PERTH 10000429).

Hysterobaeckea sp. Mt Zeil (D.E. Albrecht 8650), in Northern Territory Herbarium, *FloraNT – Northern Territory Flora Online*, https://eflora.nt.gov.au/ [accessed 18 December 2025].

[*Babingtonia behrii auct. non* (Schltdl.) A.R.Bean: D.E. Albrecht, A.W. Duguid, H. Coulson, M.G. Harris & P.K. Latz, *Vascular plant checklist for the southern bioregions of the Northern Territory* Edn. 2: 157 (2007); P.S. Short, D.E. Albrecht, I.D. Cowie, D.L. Lewis & B.M. Stuckey (eds), *Checklist of the vascular plants of the Northern Territory*: 50 (2011).]

[*Hysterobaeckea behrii auct. non* (Schltdl.) Rye: N.J. Cuff, D.E. Albrecht, L.P. Elliott, A.T. Webb & I.D. Cowie (eds), *Checklist of the Vascular Plants of the Northern Territory*: 44 (2024).]

ISSN 2200-2790 (Online)
https://florabase.dbca.wa.gov.au/nuytsia/

Shrub erect, 1–3(–4) m high, multi-stemmed from base, resprouting from base after fire; bark fibrous on older stems; decurrent tissue below leaf attachment whitish on penultimate stems. *Young stems* smooth (not tuberculate). *Leaves* mostly antrorse, rather densely covering the stems. *Petioles* 0.5–0.8 mm long, clearly defined. *Leaf blades* ± bright green, linear in outline, sometimes slightly broader at or below midpoint, 7–11(–13) mm long, 0.5–0.8 mm wide, 0.4–0.6 mm thick, thicker in distal half, broadly transversely elliptic at widest point in transverse section when fresh, drying somewhat 4-angular; abaxial surface (when dry) deeply convex distally but compressed-convex and almost 4-angular for most of length, with a line-like or narrow furrow along the midvein extending at least half its length but not quite reaching apex, with 1 or 2 rows of prominent oil glands along each side; adaxial surface (when dry) almost flat, sometimes furrowed along the centre in proximal half; apical point 0.4–0.7 mm long, recurved to uncinate, fragile, translucent or brown. *Peduncles* borne at 1–4 consecutive nodes, 3–5 mm long, 1–3(–5)-flowered; secondary axes 0.3–1.5 mm long. *Bracteoles* shed early, deeply concave, 0.4–1.4 mm long, 0.2–0.5 mm wide, with scarious margins. *Pedicels* 0.7–1.5(–2) mm long. *Flowers* 5.3–6.5 mm diam. *Hypanthium* broadly obconic to campanulate, 1.2–1.5 mm long, somewhat rugose with a few large oil glands; free part 0.4–0.5 mm long. *Sepals* depressed ovate, 0.4–0.5 mm long, 0.6–1 mm wide, scarious, smooth or slightly ridged. *Petals* 1.5–2.2 mm long, white. *Stamens* 10–13, with 2 or 3 per sepal. *Longest filaments* 0.4–0.5 mm long. *Anthers* 0.3–0.5 mm wide from front view; thecae *c.* 0.25 mm long; visible part of connective gland 0.4–0.5 mm long. *Ovary* inferior, 3-locular; ovules 7–10 per loculus, usually 8 or 9. *Style* commonly 1–1.2 mm long at maturity; stigma peltate, 0.25–0.3 mm diam. *Fruits* cup-shaped, *c.* 2/3 inferior, dehiscent by 3 terminal valves, 1.5–1.9 mm long, 1.7–2.2 mm diam. *Seeds* facetted, 0.7–0.9 mm long, pale brown. (Figures 1, 2)

Diagnostic features. Distinguished by the following combination of characters: leaf blades 7–11(–13) mm long, when pressed and dried the abaxial surface with a line-like furrow extending at least half its length; peduncles 3–5 mm long; petals 1.5–2.2 mm long; ovary 3-locular, with 7–10 ovules per loculus; fruits dehiscent, 1.5–1.9 mm long and 1.7–2.2 mm diam.

Other specimens examined. NORTHERN TERRITORY: Mt Zeil, *c.* 1 km S of summit, 9 July 1998, *D.E. Albrecht* 8650 (BRI, DNA, MEL, NT, PERTH); Mt Zeil, *c.* 80 m due E of trig, 27 Oct. 2025, *D.E. Albrecht* 17148 *& A.T. Webb* (AD, CANB, NT, PERTH); Mt Zeil, S cliff face, 5 Oct. 1991, *G. Griffin s.n. & S. Dunlop* (NT); Mt Zeil, 1 Apr. 1992, *G. Griffin s.n.* (NT); Summit of Mt Zeil, 6 Sep. 1999, *J.A. Risler* 286 *& R.A. Kerrigan* (B, DNA, NT); Mt Zeil at E end of summit ridge, 13 June 1974, *J.H. Willis s.n.* (MEL). CULTIVATED: Alice Springs Desert Park Nursery, 11 Oct. 2018, *K. Foster* 17 (NT).

Phenology. The known flowering time is from October to November. The species may flower at a specific time of the year rather than opportunistically. Plants observed in the field in 2025 commenced flowering in late October. Previous visits to the site in April, June, July, September and early October failed to yield any flowering specimens.

Distribution. *Hysterobaeckea oreophila* is the only member of its genus known from the Northern Territory, where it is restricted to Mt Zeil, *c.* 155 km WNW of Alice Springs. It occurs further north than all other members of the genus and is almost at the dead centre of the Australian mainland, as can be seen from the distribution map given for the genus in Rye (2018: 79, Figure 1).

Habitat. The species occurs on south- to south-east-facing, steep, rocky slopes above *c.* 1300 m altitude (Figure 2). All known occurrences are confined to Mt Zeil granite, which comprises medium-grained granodiorite and granite, and lesser augen gneiss (Warren & Shaw 1995). Associated species include *Callitris glaucophylla*, *Macrozamia macdonnellii*, *Pandorea doratoxylon*, *Acacia strongylophylla*, *Myoporum montanum*, *Olearia stuartii*, *Solanum lobatum*, *Coleus intraterraneus*, *Ptilotus incanus*, *Isotoma petraea*, *Pomax rupestris*, *Goodenia grandiflora*, *Triodia brizoides*, and *Paspalidium constrictum*.

Conservation status. This species is currently listed (under the misapplied name *Babingtonia behrii* (Schltdl.) A.R.Bean) as Vulnerable in the Northern Territory under the *Territory Parks and Wildlife Conservation Act 1976 (TPWCA)* (Northern Territory Herbarium 2015–). At the time of publication, its

Figure 1. *Hysterobaeckea oreophila*. A – habit; B – fibrous bark towards base of older stems; C – flowers and leaves; D – flowering branchlets; E – dehisced fruits. Scale bars: C = 4 mm; E = 1 mm. Population voucher *D.E. Albrecht* 17115 & *A.T. Webb*. Photographs by Aiden Webb.

Figure 2. *Hysterobaeckea oreophila* at type locality showing habitat and post-fire resprouting. Population voucher *D.E. Albrecht* 17115 & *A.T. Webb*. Photograph by Aiden Webb.

conservation status is being considered for revision under *TPWCA* and the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC)*. It is known from a solitary, localised population of uncertain size within the joint-managed Tjoritja/West MacDonnell National Park. Based on altitude (≥ 1300 m), a southerly aspect and Mt Zeil granite geology there is only *c.* 109 ha of potentially suitable habitat on Mt Zeil, and even this is an overestimation as it includes a substantial area of unvegetated rock. A preliminary assessment of part of the population has been undertaken but further targeted aerial survey is required to be more confident of the extent of the population and number of plants present.

Several factors need to be considered when re-assessing the conservation status of the species. These include population age structure and recruitment, and long-term impacts of Buffel Grass (*Cenchrus ciliaris*), which is currently relatively uncommon on the higher parts of the mountain but has the potential to become more abundant. Should Buffel Grass become more abundant on Mt Zeil and a positive fire-invasion feedback establish, fire frequency is likely to increase (Miller *et al*. 2010; Fusco *et al*. 2019). Although well-established plants of *H. oreophila* resprout post-fire (refer Figure 2), more frequent fire events may impact young plants leading to recruitment failure. Potential impacts of climate change such as higher temperatures and more severe droughts also require consideration. The species is likely to be at the upper limits of its thermal niche and has very limited capacity to shift upslope in response to the ongoing trend of increasing maximum temperatures in the region. McDonald *et al.* (2021) discuss this issue with respect to other high elevation range-restricted species in the MacDonnell Ranges region.

Few cutting-grown plants are currently in cultivation at the Alice Springs Desert Park (ASDP). A priority recovery action for the species should be the establishment of a viable conservation seed bank through the collection and storage of sufficient wild-collected seed.

Etymology. From the Greek *oreophilus* (mountain-loving), reflecting its occurrence on the highest mountain in the Northern Territory, which is also the highest location for the genus throughout Australia.

Common name. Mt Zeil Myrtle.

Affinities. Despite its distinctive appearance and very isolated occurrence, *H. oreophila* has previously been misidentified as *H. behrii* (Schltdl.) Rye, as have three Western Australian species (*H. longipes* Rye, *H. petraea* Rye and *H. setifera* Rye). *Hysterobaeckea oreophila* differs from *H. behrii s. str.* in fruit width (1.7–2.2 *v.* 3–3.6 mm wide in *H. behrii*), petal length (1.5–2.2 *v.* 2.5–4.5 mm long), and ovule number per loculus (7–10, usually 8 or 9 *v.* 10–13). It also differs from the somewhat *behrii*-like Western Australian species in its smaller fruits (1.5–1.9 × 1.7–2.2 *v.* 2.5–5 × 3–6 mm long by wide) and usually fewer ovules (up to 9(–10) *v.* up to 18).

Notes. *Hysterobaeckea oreophila* belongs to the large subtribe Hysterobaeckeinae Rye & Peter G.Wilson, within the Myrtaceae tribe Chamelaucieae DC., and is the only member of that subtribe known to occur in the Northern Territory. *Hysterobaeckea* is unique in the subtribe in having a wide distribution that extends most of the distance across southern Australia, including much of the arid zone. Rye (2026) describes two additional arid-zone species and provides a key to the 14 named species now included in the genus.

Recent molecular sequencing indicates that *H. oreophila* is correctly placed within *Hysterobaeckea* (Nge *et al.* 2025, as *H. aff. behrii*) and is sister to (and distinct from) a group of species comprising *H. behrii*, *H. petraea*, *H. ochropetala* (F.Muell.) Rye, *H. tuberculata* (Trudgen) Rye and *Malleostemon* sp. Officer Basin (D. Pearson 350), now named *H. uniloculata* Rye (see Rye 2026).

In newly opened flowers of *H. oreophila* the style is 0.5–1 mm long, but is *c.* 1.2 mm long in a dehisced fruit. In cultivation, the species may produce some leaves that are slightly longer (to 13 mm) than those observed in the wild, but perhaps leaves of that length are sometimes produced in the wild when conditions are particularly favourable.

Acknowledgements

We thank Sally Mumford for preparing Figure 1, Aiden Webb for assistance with field work and for providing images, Nick Cuff for providing helpful comments on the manuscript and calculating the area of potentially suitable habitat, and Peter McDonald for facilitating the use of a helicopter to collect type material. Specimens were collected under permit 71982 pursuant to sections 56 and 57 of the *TPWCA*. We also thank Juliet Wege for her helpful comments.

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