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Olearia apiculata (Asteraceae), a new species endemic to the Central Tablelands of New South Wales

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Introduction

Olearia suffruticosa is a subshrub with a woody rootstock that occurs in seasonally swampy ground. This species is somewhat unusual for the genus *Olearia* in being subshrubby, with stems renewing from below-ground rootstock, and producing leaves with immersed glands. It is a highly restricted species; at the time of its description by Cooke (1985) it was known only from a few scattered populations in seasonal wetlands in the southeast of Australia, ranging from Reedy Creek to Canunda, in South Australia, and east to Dartmoor and Glenisla in the western Grampians in south-west Victoria.

In 1995, plants assigned to this species were recorded from a highly disjunct population in the Wallerawang area in the Central Tablelands of New South Wales. Subsequent to that collection, it was also collected further north near Lidsdale and in Turon National Park. The validity of these records as being native to that area have been confirmed by historic records from Wallerawang and Capertee (NSW 180685, NSW 180682). These New South Wales populations have always been regarded as taxonomically dubious owing to their large geographic separation from *Olearia suffruticosa* in South Australia and Victoria, along with differences in their habitat, and several different morphological features.

Abstract

Olearia apiculata Messina is described as new to science, with notes on the morphological features that distinguish it from *O. suffruticosa* D.A.Cooke, a species with which it has previously been conflated. *Olearia apiculata* accommodates the disjunct populations from New South Wales previously placed under *O. suffruticosa*, a taxon that is now once again regarded as being restricted to southeastern South Australia and southwestern Victoria.

Keywords: Taxonomy, *Olearia suffruticosa*, disjunct populations

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Following considerable collection efforts in New South Wales over the past 15 years, there are now sufficient collections to allow for a critical review of the morphological differences exhibited across the entire distribution of *Olearia suffruticosa* within its current circumscription. Following inspections of collections held at AD, MEL and NSW (herbarium acronyms follow Thiers 2025), it was possible to confirm that the plants from New South Wales are consistently distinct in terms of habit, leaf, conflorescence arrangement, and size of capitula and fruits (Table 1). These distinctions, along with the large geographic disjunction, are sufficient to warrant the recognition of the plants from New South Wales at species rank.

Taxonomy

Olearia apiculata Messina *sp. nov.* (Figs. 1, 2a–c)

Type: **AUSTRALIA.** New South Wales, c. 10 km W of Capertee, Stockyard Gully, c. 300 m S of confluence with Turon River, Turon National Park, 16.v.2012, *R.L. Johnstone 3155, S. Clarke & C. Avery* (holo: NSW 894316).

Wiry subshrub to c. 70 cm high, glabrous, somewhat resinous. Stems striate, branched from base of plant, lower stems woody and spreading, upper stems slender and usually erect. Leaves sessile, alternate, clustered, spreading to ascending, narrow-oblong to linear, rarely oblanceolate, entire, compressed-terete, channelled above, strongly keeled below when dried, 2.5–8(–11) mm long, 0.5–1 mm wide, becoming smaller, solitary and ascending towards the ends of uppermost (flowering) branchlets, concolorous, with scattered immersed glands appearing as lumps in dried material, midrib and margins usually minutely and sparsely tuberculate; apex acute to acuminate, rarely obtuse, apiculate. Capitula terminal, solitary or with few heads forming a very loose corymbose panicle; involucre campanulate to hemispherical, 2–3-seriate; bracts graduating, 3–4 mm long, membranous, green, narrow-elliptic to lanceolate or subulate, with scattered immersed glands; margins densely fringed in upper third, apex acute, often purplish. Ray florets c. 15–22, ligules 5–8 mm long, mauve or white. Disc florets c. 16–28, yellow, sometimes turning pink on dried specimens. Cypsela ±cylindric, obscurely ribbed, 1–2 mm long, moderately to densely covered in white to fawn-coloured simple hairs, hairs to c. 0.4 mm long, usually not overtopping the base of the pappus; pappus in 1 series, often with a second row of shorter bristles, bristles c. 25–35, 2.5–3.5 mm long, white or fawn-coloured.

Phenology: Flowers October–May.

Representative specimens (19 examined): NEW SOUTH WALES. Wallerawang, *J.L. Boorman s.n.* iv.1901 (NSW!); Mount Piper - Wallerawang area, *S. Bell s.n.*, x.1995 (NSW!); c. 6 km SW of Capertee, Turon National Park, *S. Clarke 271*, 1.i.2011 (NSW!); Flanks of ridge above Cox's Creek, c. 16 km N of Sunny Corner, *S. Clarke 277*, 1.i.2011 (NSW!); 6–7 km SW of Capertee, on western flanks of Stockyard Gully, Turon National Park, *S. Clarke 285*, 1.i.2011 (NSW!).

Distribution and Habitat: Restricted to a few highly localised populations in the Central Tablelands of New South Wales in the Lithgow area north to Turon National Park. Occurs on slopes and flats near creek lines in open forest and woodland in shallow rocky soils.

Taxonomic notes: *Olearia apiculata* is regarded as a sister species to *O. suffruticosa*, which is itself closely related to *O. glandulosa*. All three species are united in having immersed glands in their leaves and bracts (Chen et al. 2024; Cooke 1985). It is unclear if these species have an association with *Olearia heloderma* Albr. & I.Telford, which also possesses leaves with immersed glands but is otherwise morphologically distinct. Molecular data presented by Chen et al. (2024) does not appear to support a close association between *O. heloderma* and *O. suffruticosa*.

Nesom (2020) described 10 new genera in *Olearia*, placing *O. suffruticosa* and *O. glandulosa* in the segregate genus *Eoglandula* G.L.Nesom – a superfluous name and synonym of the earlier name *Spongotrichum* (DC.) Nees ex Spach (Nesom 2021). This work has not been adopted here or more broadly in Australia as its conclusions are regarded as somewhat premature, being based on an incomplete and poorly supported phylogeny (Albrecht et al. 2024; Chen et al. 2024; VicFlora 2024). Most recently, a phylogenomic study by Chen et al. (2024) has refuted at least some of the genera proposed by Nesom (2020) – including *Eoglandula/Spongotrichum*, *Muellerolaria* G.L.Nesom and *Wollemiaster* G.L.Nesom – with most genera either not forming monophyletic clades or

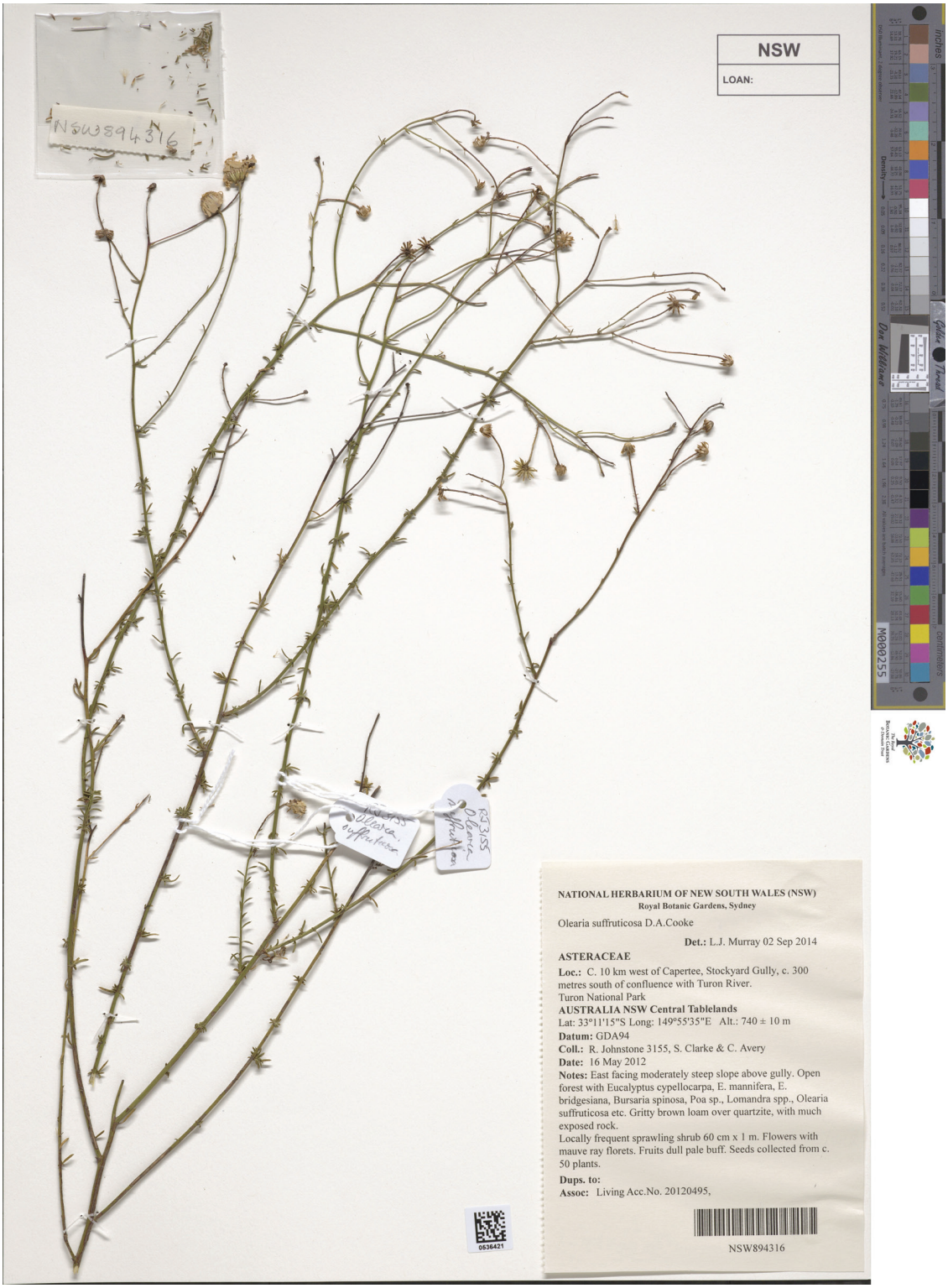

Figure 1. Holotype of *Olearia apiculata* (NSW 894316). National Herbarium of NSW was accessed on 15 October 2024 from https://registry.opendata.aws/nsw-herbarium. Published under a Creative Commons BY 4.0 (CC-BY 4.0) license.

nesting within a broader clade that includes the type species of *Olearia* (*O. tomentosa* (J.C.Wendl.) DC.) and therefore most appropriately included in *Olearia s.s.* The placement of *Eoglandula*/*Spongotrichum* is inconsistent across the three phylogenies generated by Chen et al. (2024) and, on balance, the data presented suggest that it is reasonable to maintain *O. suffruticosa*, *O. glandulosa* and the newly described *O. apiculata* in *Olearia* rather than *Spongotrichum*.

Notes

A summary of characters used to distinguish this species from *Olearia suffruticosa* is given in Table 1, with some of the more microscopic features illustrated in Figure 2. The principal distinguishing features of *O. apiculata* are the much more woody and branched lower stems (c.f. *O. suffruticosa* which has slender, non-woody, relatively short-lived stems arising from a woody rootstock that are unbranched in the lower three-quarters, and periodically renewed), and the clustered leaves that are generally shorter, have an apiculate apex and are minutely tuberculate – particularly on the margins and midrib (Figure 2a).

In dried specimens of *Olearia apiculata*, the midrib becomes very pronounced, making leaves appear strongly involute rather than terete, and immersed glands are typically quite obscure, only seen on the midrib of very young leaves and on involucral bracts. In addition to these features, *O. apiculata* tends to have larger heads that are either borne in very sparse panicles or solitary, have distinctly fringed bracts (Figure 2b), and a relatively long pappus which is typically longer than the cypsela (c.f. pappus and cypsela length being ±equal in *O. suffruticosa*) (Figure 2c).

Furthermore, these two species are geographically and ecologically distinct. *Olearia apiculata* is restricted to the Central Tablelands district of NSW where it occurs on rocky, usually quartzite-derived soils in open forest and woodland. The closest population of *O. suffruticosa* occurs some 800 km to the southwest in southwestern Victoria, where it occurs in seasonal swamps in

Table 1: Diagnostic features of *Olearia apiculata* and *O. suffruticosa*.

Character	*O. apiculata*	*O. suffruticosa*
Stems	Lower portion of stems woody and branching	Stems slender, non-woody. Lower portion of stems unbranched
Leaves		
Arrangement	Mostly clustered	Solitary
Orientation	Spreading to ascending	Ascending to subappressed
Length	2.5–8(-11) mm	3–14(-24) mm
Apex	Apiculate	Rounded, not apiculate
Minute tubercles	Present on margins & midrib	Absent
Capitula		
Arrangement	Solitary or in very sparse, loose corymbose panicles	Corymbose panicles on short upper branches
Bract length	2–3 mm	3–4 mm
Bract margins	Densely fringed in upper third	Sparsely ciliate
Ligule colour	Mauve or white	White or pink
Cypsela		
indumentum	Not or hardly overtopping base of pappus, rarely to 0.4 mm	Usually overtopping base of pappus, c. 0.5 mm long
Pappus bristles	1-seriate usually with a second row of shorter bristles	1-seriate, without a second row of shorter bristles
Pappus length	2.5–3.5 mm long	1–2 mm long
Habitat	Open forest and woodland, shallow rocky quartzite derived soils	Sedgelands or wet heathlands in sandy or cracking clay soils

sedgeland and wet heathland on sandy and cracking clay soils.

The clustered leaves present in *Olearia apiculata* do not appear to be the retention of a juvenile state, but rather a unique character. This has been confirmed via plants grown by the South Australian Seed Conservation Centre from populations near Canunda and Lucindale, with plants from both sites producing solitary leaves from seedling stage (Plants of South Australia 2024). The clusters of leaves in *O. apiculata* are likely to be undeveloped lateral shoots, similar to those of *O. ramulosa* (Labill.) Benth. This species occurs in close proximity to *O. apiculata,* and the two may be confused due to similarities in leaf arrangement and scabrosity, as well as ligule colour. However, *O. ramulosa* may be readily distinguished by its setose stems, recurved leaf margins, and woolly leaf undersurface, along with a raft of other more subtle characters.

At the time of publication this species does not neatly key out in the New South Wales Flora Online

Figure 2. Comparative images of leaves, capitula and cypsela. **a–c** *Olearia apiculata* (NSW 894316). **d–f** *O. suffruticosa* (MEL 2296468). Scale bar: 2 mm in a (insert = 0.5 mm) and d; 1 mm in b,c,e,f.

(PlantNet 2024), as step 10 requires heads to be borne in leafy panicles. Both *O. apiculata* (as *O. suffruticosa*) and *O. brevipedunculata* N.G.Walsh can bear solitary heads, the latter taxon nearly always, so it is recommended that this portion of the key be changed to:

10 Capitula 13–45 mm diam.; leaves flat; mallee woodlands on the western plains..... 13

10. Capitula <16 mm diam.; leaves conduplicate to compressed terete or flat; on or east of the Great Dividing Range..... 11

11 Leaves flat, densely hairy.....*Olearia brevipedunculata*

11. Leaves conduplicate to compressed terete, glabrous, often with immersed glandular swellings..... 12

12 Leaves not apiculate, mostly >10 mm long; heads in compound corymbs; ray florets white .....*Olearia glandulosa*

12. Leaves apiculate, mostly <10 mm long; heads solitary or in very loose corymbose panicles; ray florets mauve to white. .....*Olearia apiculata*

13 Disc florets ± 18; pappus 1-seriate, bristles ± 50 .....*Olearia muelleri*

13. Disc florets ± 21; pappus 2-seriate, bristles ± 74 .....*Olearia calcarea*

Conservation Status

A formal conservation listing under the EPBC act for *Olearia suffruticosa* is underway; this assessment currently includes *O. apiculata*. Accordingly, the assessment will require revision to account for the recognition of plants in NSW as a separate taxon. *Olearia apiculata* is highly localised and likely to require listing at both state and federal levels. No attempt has been made here to speculate as to the possible conservation status of this new species as a formal listing is likely to be forthcoming following this manuscript.

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