



Platysace summicola (Apiaceae), a rare new species from the Stirling Range, Western Australia

Andrew J. Perkins^{1,2*} & Robert W. Davis³

¹ Phoenix Environmental Sciences, PO Box 1031, Innaloo, Western Australia 6018, Australia.

² Research Associate, Western Australian Herbarium, Department of Biodiversity, Conservation and Attractions, Locked Bag 104, Bentley Delivery Centre, Western Australia 6983, Australia.

³ 2/66 Earl Street, Albany, Western Australia 6330, Australia.

*Corresponding author: aperkins@hotmail.com.au

Andrew J. Perkins  <https://orcid.org/0000-0002-5082-8186>



© Copyright of this paper is retained by its authors, who, unless otherwise indicated, license its content under a CC BY 4.0 license

Abstract

Platysace summicola, a rare species from the Stirling Range in south-western Western Australia, is here described with associated photographic images and distribution map. The new species, with distinctly winged stems, is restricted to low shrubland communities located on the upper slopes and rocky mountain summits, within the Stirling Range National Park.

Cite this paper as: Perkins AJ & Davis RW (2026). *Platysace summicola* (Apiaceae), a rare new species from the Stirling Range, Western Australia. *Australian Journal of Taxonomy* 126: 1–9. doi: <https://doi.org/10.54102/ajt.ophlb>

Introduction

Platysace Bunge (1845: 285) is an Australian genus of shrubby carrots (Apiaceae) (Norman 1939, Keighery 1996) containing 23 formally named species (CHAH 2010) of which, 16 occur in Western Australia (Western Australian Herbarium 1998–). The genus is morphologically diverse, with some species being erect woody shrubs up to 4 metres high, such as *Platysace arnhemica* Specht and *Platysace saxatilis* Keighery; others low spreading subshrubs, such as *Platysace deflexa* (Turcz.) C.Norman and *Platysace tenuissima* (Benth.) C.Norman; some being subshrubs fattened or winged stems like *Platysace filiformis* (Bunge) C.Norman and *Platysace compressa* (Labill.) C.Norman; and uniquely, *Platysace cirrosa* Bunge is a seasonal, resprouting twiner.

The purpose of this paper is to provide a valid name to a species with distinctly winged stems that has an assigned phrase name (Western Australian Herbarium 1998–) and is restricted in distribution to the upper slopes and summit areas of rocky peaks within the Stirling Range, Western Australia. The new species shares a similar habit and winged stem morphology to both *Platysace compressa* and *P. filiformis*. The novel species is formally described herein as *Platysace summicola* A.J.Perkins.

Methods

This study was based on the examination of fresh material of the undescribed species and herbarium specimens of morphologically similar taxa, held at PERTH (Western Australian Herbarium). Evidence for the recog-

This paper was submitted on 1 April 2026 and published on 16 June 2026 (2026-06-16T10:12:16.434Z). It was reviewed by Paulo Baleeiro and Barbara Rye, and edited by Subject Editor Brendan Lepschi under the guidance of Associate Editor Tom May. *Australian Journal of Taxonomy*. ISSN: 2653-4649 (Online).

nition of the new species is centred on discrete morphological characters identified from comparisons made with *P. filiformis* and *P. compressa*. Vegetative and floral characters were measured from fresh and herbarium material using a dissecting microscope and the descriptive morphological terminology used was modified from that used by Keighery (1996). A distribution map for the new species was produced from voucher specimen data using QGIS Version 3.42.2. Habitat and phenology data were collected from field observations. Images of type materials held interstate and overseas were accessed via Global Plants (<https://plants.jstor.org/>).

Taxonomy

Platysace summicola A.J.Perkins, *sp. nov.*

TYPE. AUSTRALIA. Western Australia: Stirling Range [precise locality withheld for conservation reasons], 19 November 2019, A.J. Perkins AJP-WA162 & R.W. Davis (holotype: PERTH 09781803, isotypes: AD, CANB, MEL, NSW).

Platysace sp. Stirling (J.M. Fox 88/262), Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [accessed 4 May 2025].

Figures 1&2

Diagnosis. *Platysace summicola* can be distinguished from all other *Platysace* species by the combination of winged stems; compound umbellate inflorescences with 1–4 rays; ascending linear involucre bracts; laterally flattened schizocarps; and mature mericarps with minutely rugulose and sparsely tuberculate surfaces.

Description. Arching to trailing perennial subshrubs 3–40 cm high, 10–80 cm wide, andromonecious, with distinctly winged stems and small persistent leaves. Stems flattened or winged; (0.5–)2.0–4.5 mm wide, 1–2 mm thick. Leaves carnose, 2.5–8.5(–10) mm long, 0.2–15 mm wide, margins entire; basal leaves along stems dissected to tri-fid, becoming simple and reduced towards the tips of stems; simple leaves lanceolate to linear lanceolate. Inflorescences umbellate, predominantly compound or occasionally simple, 4–12 mm wide; with a mixture of bisexual and functionally male flowers. Involucre bracts 6–8, carnose, linear lanceolate to linear, longitudinally flattened, 1.5–6.0 mm long, ascending, apices acute. Simple umbels with 3–6 flowers. Compound umbels with 6–22 flowers, 1–4(–5) rays and 2–16 flowers between the rays; rays 2–8 mm long; each umbellule with 2–5 flowers. Bracteoles 2–3, linear-lanceolate, 1.4–2.7 mm long. Pedicels 1.0–2.5 mm long at anthesis. Ovaries reddish green to crimson; elliptic and subcordate in bisexual flowers, attenuate in male flowers. Sepals rudimentary, scale-like, 0.1–0.3 mm long. Petals 1.5–2.2 mm long, 1.2–1.7 mm wide, white, dark crimson to pink on outer surface when in bud. Fruit (schizocarp), bilaterally flattened, symmetrical, elliptic to orbicular with cordate bases, 3.5–6.0 mm long, 3.5–5.0 mm wide, dark brown when mature. Mericarps 1.7–2.5

mm wide, surfaces minutely rugulose and sparsely tuberculate. Fruiting styles reflexed, c. 1.0 mm long. Carpophores 1.6–2.3 mm long, bifid at their apices. (Figures 1 & 2)

Other specimens examined. Western Australia Stirling Range [precise locality withheld for conservation reasons], 4 October 1994, S. Barrett 96: PERTH 04204905; 23 March 2000, S. Barrett 848: PERTH 05723973; 6 April 2000, S. Barrett 837: PERTH 05723957; 18 April 2000, S. Barrett 836: PERTH 05754356; 7 December 2000, S. Barrett 908: PERTH 06903894; 1 February 2002, S. Barrett 981: PERTH 06903886; 5 February 2002, S. Barrett 986: PERTH 06903835; 5 February 2002, S. Barrett 987: PERTH 06903878; 20 January 2004, S. Barrett 1174: PERTH 06903843; 25 February 2004, S. Barrett 1202: PERTH 06903851; 22 May 2018, S. Barrett SB2284: PERTH 09277471; 16 January 2003, J.A. Cochrane JAC 4544: PERTH 06476430; 10 October 1971, B. Dell s.n.: PERTH 03542246; 9 October 1988, J.M. Fox 88/262: PERTH 03462188; 12 November 1961, A.S. George 3135: PERTH 03542157; 23 October 2003, A.J. Perkins AJP-WA58: PERTH 06865003; 19 November 2019, A.J. Perkins AJP-WA163 & R.W. Davis: PERTH 09781854; 22 December 2019, A.J. Perkins & R.W. Davis s.n.: PERTH 09871919; 27 October 1959, R.D. Royce 6061: PERTH 03618072; 21 January 2011, E.M. Sandiford 1776: PERTH 09127453; 28 February 1989, R.T. Wills 1195: PERTH 06383416.

Phenology. Inflorescences start developing in mid-September with flower buds appearing pinkish-red to dark crimson in colour. Plants then flower and fruit from October, through to May of the following year.

Distribution & habitat. *Platysace summicola* is restricted to low shrubland communities, located on rocky mountain summits, within the Stirling Range National Park. (Figure 3)

Conservation status. *Platysace summicola* is listed as 'Priority Four' in the Conservation Codes for Western Australian Flora (Western Australian Herbarium 1998–), under the name *Platysace* sp. Stirling (J.M. Fox 88/262).

Etymology. The botanical name is derived from the Latin 'summum' (highest place or summit) and the Latin ending '-cola' (dweller, inhabitant), in reference to this species being restricted in habitat to the upper slopes and summits of many of the peaks within the Stirling Range. (Figure 3B)

Vernacular name. Stirling Range Platysace.

Notes. *Platysace summicola* is distinctive within the genus in having winged stems, compound umbellate inflorescences with 1–4 rays, ascending linear involucre bracts, and laterally flattened schizocarps with minutely rugulose and sparsely tuberculate surfaces (Figures 1 & 2). The novel species shares some morphological similarities with both *P. filiformis* (Figure 4) and *Platysace compressa* (Figure 5). All 3 species have distinctly winged stems, compound umbellate inflorescences, flowers with white petals and laterally compressed schizocarps.

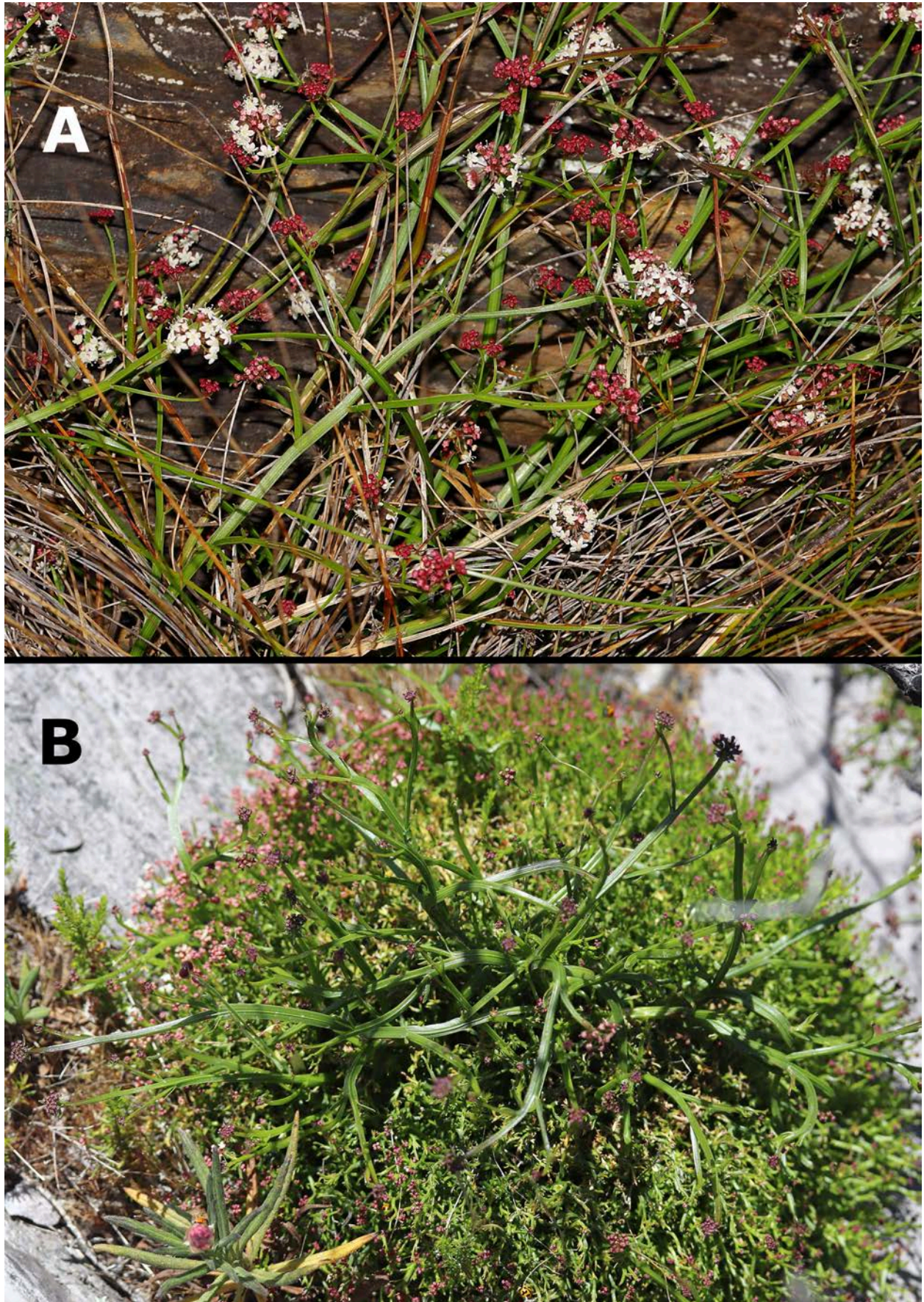


FIGURE 1. *Platysace summicola*. **A:** The habit of *Platysace summicola* flowering *in situ*.; **B:** Habit of a *P. summicola* fertile plant, post wildfire, exhibiting both (dimorphic) stem morphologies - with 'mature' stems in the centre of the plant, surrounded by the (shorter) finer, sinuous stems. Photographs by Andrew Perkins taken of plants *in situ*.

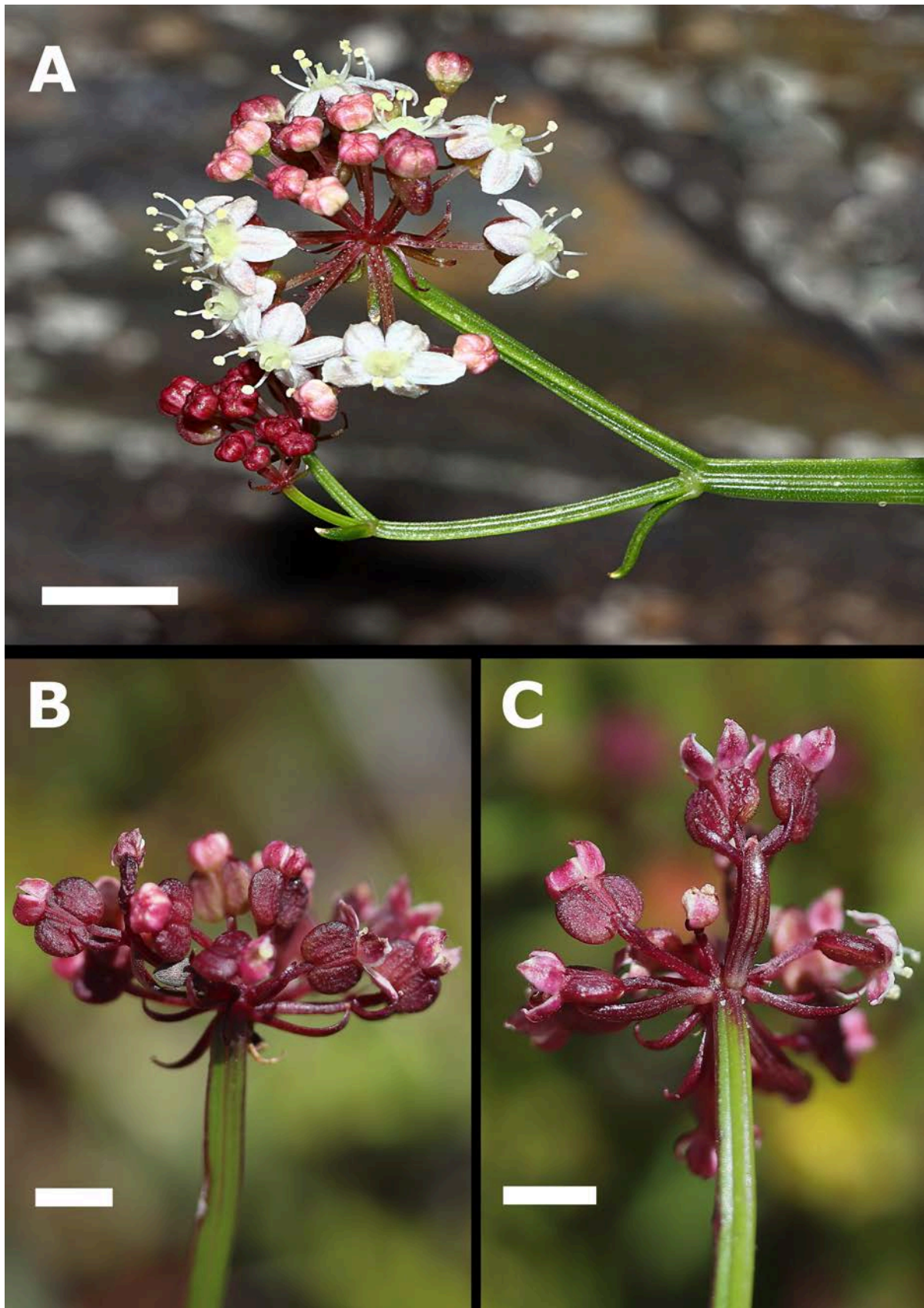


FIGURE 2. A: A flowering branchlet of *P. summicola* showing newly opened flowers, with a clear view of the reddish linear involucral bracts and some spreading leaves at each internode; **B:** A side view of umbellate inflorescence at the early stages of anthesis, showing the involucral bracts and the laterally flattened carpels with minutely rugulose surfaces; **C:** A ventral view of a umbellate inflorescence showing both umbellules and central flowers subtended by the whorl of involucral bracts. Scale bars A=5 mm; B=2 mm; C=2 mm. Photographs by Andrew Perkins taken of plants *in situ*.

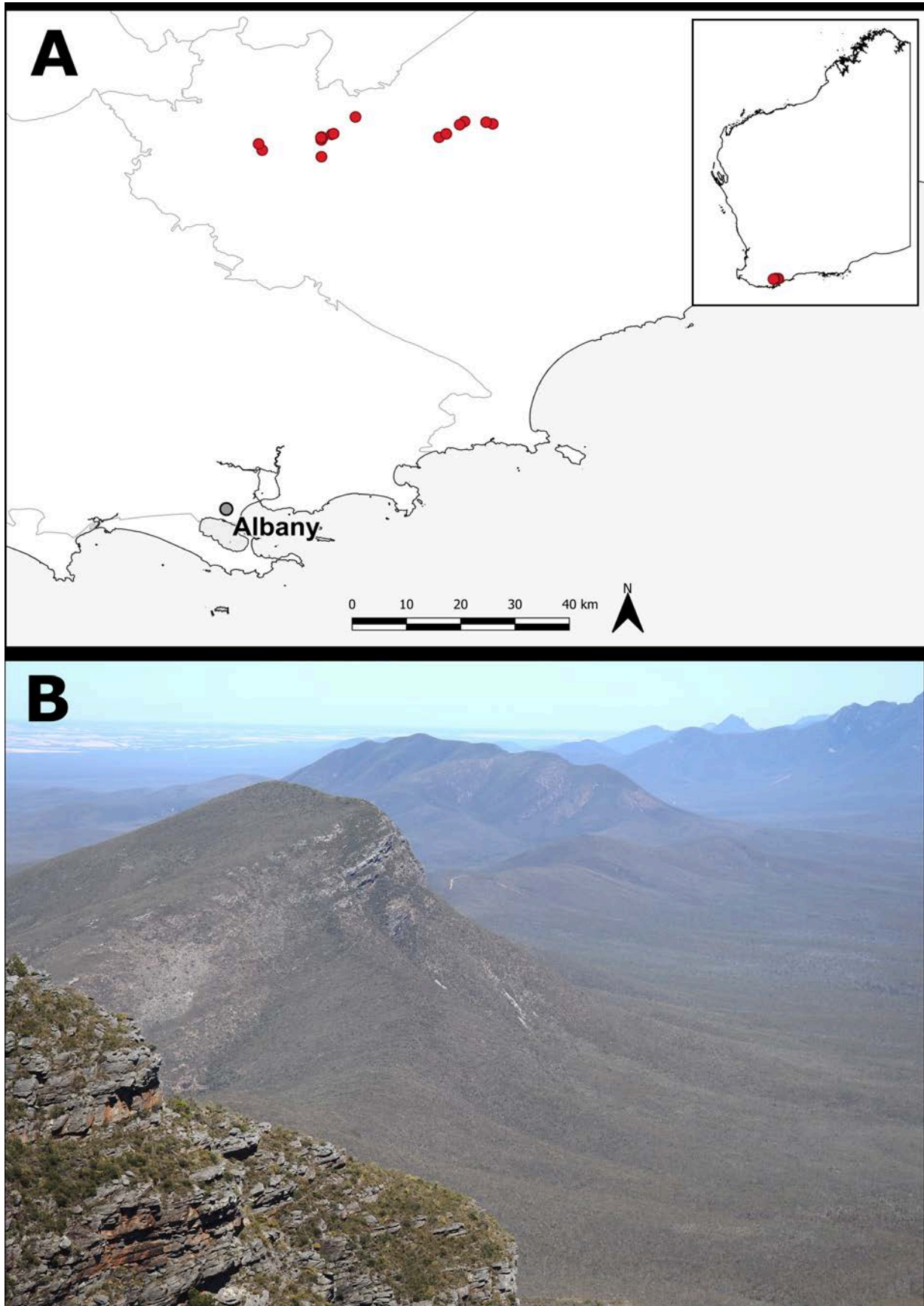


FIGURE 3. A. Distribution of *Platysace summicola* in south-west Western Australia (red circles) based on specimens held at PERTH; **B.** Typical mountain summit habitat of *Platysace summicola* within the Stirling Range National Park. Photograph by Andrew Perkins.

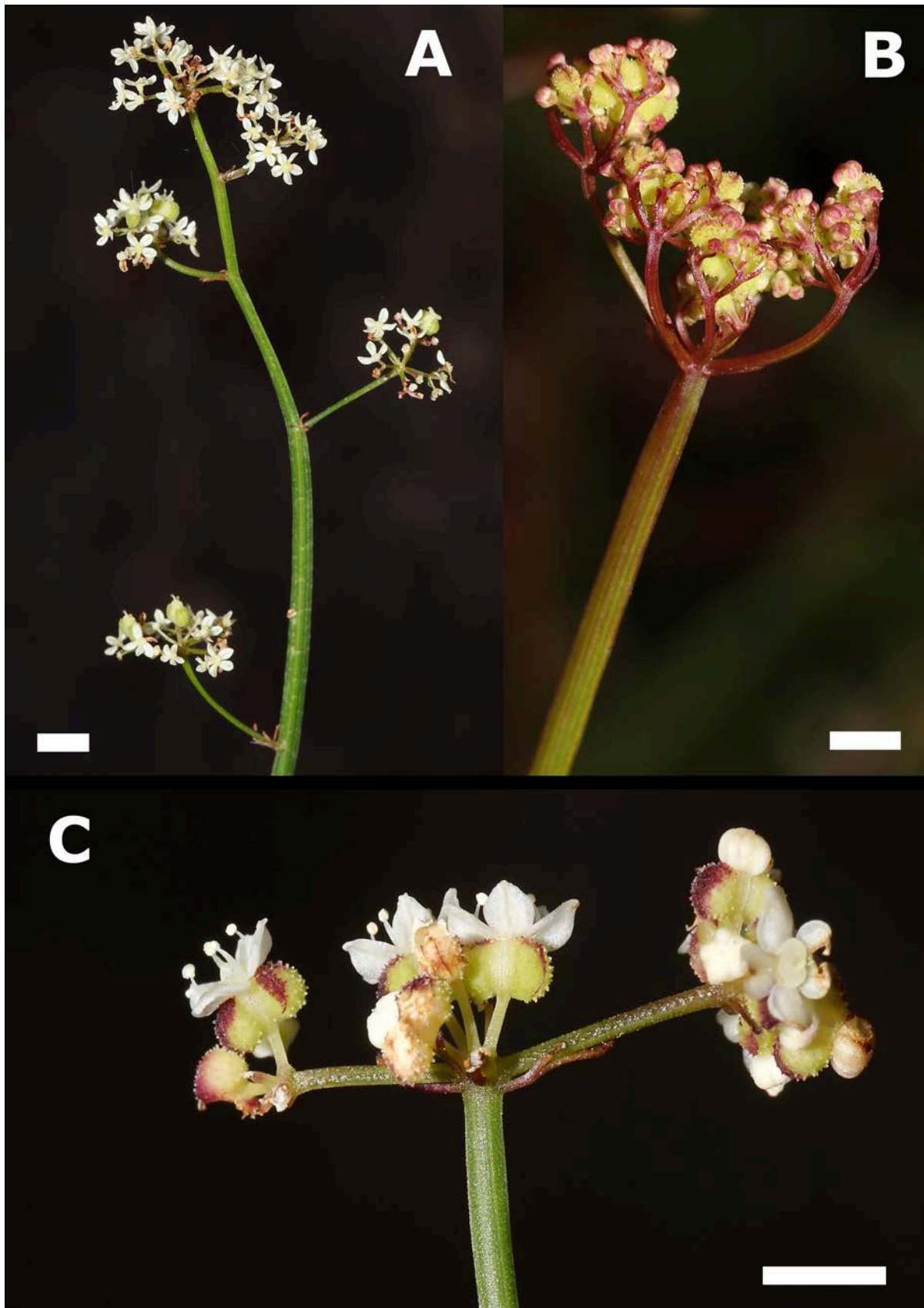


FIGURE 4. *Platysace filiformis*. **A.** Flowering branchlet showing architectural branching pattern typical for the species, with inconspicuous, dissected leaves subtending each branching stem; **B.** Compound umbellate inflorescence in bud prior to anthesis showing filiform involucral bracts, the architecture of the rays and umbellules; **C.** A flowering umbellate inflorescence showing the distinctly papillate schizocarp surfaces. Scale bars A=5 mm; B=2 mm; C=2 mm. Photographs by Andrew Perkins taken of plants *in situ*.



FIGURE 5. *Platysace compressa*. **A.** Flowering compound umbellate inflorescence with 5 rays and bisexual flowers with convex mericarp surfaces; **B.** Winged stems with irregular reticulate markings and a dissected (inconspicuous) leaf subtending a branching stem; **C.** Flowering plants *in situ* showing typical habit of plants growing in coastal habitats. Scale bars A=5 mm; B=5 mm. Photographs by Andrew Perkins (**A & B**) and Robert Davis (**C**) taken of plants *in situ*.

TABLE 1. Comparison of key morphological characters for *Platysace summicola* with *P. compressa* and *P. filiformis*.

	<i>P. summicola</i>	<i>P. compressa</i>	<i>P. filiformis</i>
Stem width	* 2.0–4.5 mm in mature growth * 0.5–2.0 mm in seedlings/resprouting plants post wild-fires	5.0–11.0 mm	0.8–3.8 mm
Leaf shape	Trifid to linear lanceolate, occasionally dissected	Dissected, occasionally trilobed; leaf lobes filiform	Dissected to trilobed; leaf lobes filiform
Leaf orientation & length	Spreading to reflexed, 2.5–8.5 mm long	Inconspicuous, 2–6 mm long	Inconspicuous, 1–4.5 mm long
Involucral bract shape	Linear, longitudinally flattened, tips acropetal at anthesis	Filiform, dissected, occasionally trilobed, resemble stems leaves.	Filiform, mostly linear to occasionally bi- or trilobed
Rays per umbel	(0–)1–4	4–12	3–9
Mericaip surfaces	Minutely rugose with occasional tubercles	Glabrous or minutely rugose, rarely papillate	Distinctly papillate or rarely glabrous
Mericaip cross-sectional shape	Distinctly flattened	Biconvex, lenticular	Biconvex, lenticular
Schizocarp length	3.5–6.0 mm	1.5–2.2 mm	0.8–1.7 mm
Schizocarp width	3.5–5.0 mm	2.0–3.0 mm	1.2–2.0 mm

Platysace filiformis (Figure 4) can be differentiated from *P. summicola* by its inconspicuous, dissected leaves (1–4.5 mm long), filiform involucral bracts, generally more complex umbellate inflorescences (3–9 rays), smaller fruit (schizocarps 0.8–1.7 mm long, 1.2–2.0 mm wide) and mericarps with distinct convex surfaces that are distinctly papillate or rarely glabrous (Table 1). Similarly, *Platysace compressa* (Figure 5) can be differentiated from *P. summicola* by its broader winged stems (5–11 mm wide), small inconspicuous leaves (2–6 mm long, along mature stems), dissected involucral bracts, more complex umbellate inflorescences (4–12 rays), smaller fruit (schizocarps 1.5–2.2 mm long, 2.0–3.0 mm wide) and mericarps with distinct convex surfaces (Table 1).

The winged stem morphology in *P. summicola* is on occasion dimorphic (Figure 1B) with seedlings, as well as plants resprouting after wildfires, having finer winged stems (0.5–2 mm wide), shorter internodes (3–15 mm apart) that give the stems a distinctly more sinuous or zig-zag like in growth form than that of the ‘mature’ stem morphology with longer internodes (15–120 mm apart) (see Figure 1A). The leaves along these fine, sinuous stems are similar in dimensions to the develop on the broader, ‘mature’ stems, with laminas being lanceolate or tridentate in shape. Transition from the sinuous to the straighter stem morphologies has been observed to be somewhat gradual (in seedlings) or quite sudden, particularly in plants recovering the season or two after

a wildfire event (Figure 1B). Plants of *P. summicola* (in a flowering season following a wildfire) can be fertile on both types growing stem morphology, with the umbels being much smaller in dimensions and complexity (0–2 rays) (Figure 1B). Both types of stem morphology are well represented in the fertile herbarium vouchers held at PERTH. The winged stem morphology in both *P. compressa* and *P. filiformis* is homogeneous and homologous to the broader, less sinuous stem morphology in *P. summicola*. Interestingly, the finer, sinuous (shorter internode) to zig-zag stem morphology is more reminiscent of the stem morphologies in other taxa such as *P. haplosciadia* (Benth.) C.Norman, *P. ramosissima* (Benth.) C.Norman and *P. xerophila* (E.Pritz.) L.A.S.Johnson.

Disclosures

No conflict of interest for both authors.

Acknowledgments

The authors wish to thank the curators of PERTH (Western Australian Herbarium) for providing access to their vouchers; Supreema Sinha (PERTH) and Julia Percy-Bower (PERTH) for curatorial assistance. Images of interstate and overseas types were viewed via Global Plants (<https://plants.jstor.org/>).

References

- Bunge, A.A. von in Lehmann, J.G.C. (ed.) (1845). *Umbelliferae. Plantae Preissianae*1(2): 285
- CHAH (2010). *Australian Plant Census*, Council of Heads of Australasian Herbaria. <https://biodiversity.org.au/nsl/services/APC> (accessed 1 April 2025).
- Keighery, G.J. (1996). A new species of *Platysace* (Apiaceae) from Northern Australia. *Nordic Journal of Botany* 16(2): 135-137
- Norman, C. (1939). Notes on the genus *Platysace* Bunge. *Journal of Botany, British and Foreign*. 87: 207-211
- Western Australian Herbarium (1998–). *Florabase—the Western Australian Flora*. Department of Biodiversity, Conservation and Attractions. <https://florabase.dbca.wa.gov.au/> [accessed 4 May 2025].



This paper was typeset using Prince

www.princexml.com