

**A new, geographically restricted species of *Acrotriche*
(Ericaceae: Epacridoideae: Styphelieae) from the central
south coast of Western Australia and an updated key to species**

Michael Hislop¹, Katherine Walkerden² and Julie Waters²

¹ Western Australian Herbarium, Biodiversity and Conservation Science,
Department of Biodiversity, Conservation and Attractions,

Locked Bag 104, Bentley Delivery Centre, Western Australia 6983

² Shire of Esperance, PO Box 507, Esperance, Western Australia 6450

¹ Corresponding author, email: Michael.Hislop@dbca.wa.gov.au

SHORT COMMUNICATION

Acrotriche R.Br. is a small, morphologically distinctive genus characterised by usually greenish flowers with long hair tufts towards the corolla lobe apices, in combination with often dense hairs within the throat of the corolla tube. The species described here brings to 19 the number now recognised Australia-wide (Council of Heads of Australasian Herbaria 2006–) with eight occurring in Western Australia (Hislop 2007; Hislop 2010). The new species was discovered by K. Walkerden and J. Waters in September 2021 during a detailed flora survey as part of an environmental impact assessment for a local government infrastructure project in the Cascade area.

Acrotriche platycarpa* Hislop, *sp. nov.

Typus: Cascade area, Western Australia [precise locality withheld for conservation reasons], 14 July 2022, K. Walkerden & J. Waters KSW9222A (*holo*: PERTH 09486356; *iso*: CANB, K, MEL, NSW).

Spreading *shrubs* to *c.* 60 cm high and 120 cm wide, multi-stemmed at base from a fire-tolerant rootstock. Young *branchlets* with a moderately dense indumentum of patent to retrorse hairs, to *c.* 0.1 mm long. *Leaves* spirally arranged, usually steeply antrorse, slightly glaucous on younger leaves; apex long-mucronate, pungent, the mucro 0.4–1.2 mm long; base cuneate to ± rounded; petiole 0.5–1.2 mm long, shortly hairy on the adaxial surface and usually also on the margins, ± glabrous on the abaxial surface; lamina usually narrowly oblong or narrowly elliptic, occasionally narrowly ovate, 7–15 mm long, 1.5–2.3 mm wide, distinctly convex adaxially with variably recurved margins, longitudinal axis slightly incurved to slightly recurved; surfaces strongly discolourous; adaxial surface shiny, glabrous or with sparse, short hairs towards the base, venation not evident; abaxial surface much paler, matt, glabrous, with 5 or occasionally 7 primary veins that are strongly highlighted against the paler, ± flat or slightly sunken intercostal tissue, intercostal distance between midrib and first vein on either side 0.2–0.3 mm; margins glabrous or with sparse, minute hairs < 0.05 mm long. *Inflorescence* erect to sub-pendulous, axillary or arising from bare nodes a little below the current leaves; axis 1.8–4.5 mm long, 2–6-flowered, terete, with a moderately dense indumentum, terminating in a rather obscure bud-rudiment; flowers erect or spreading, sessile. *Fertile bracts* depressed-ovate, 0.6–1.0 mm long, 0.9–1.3 mm wide, subtended by 7–10 sterile bracts which obscure much of the surface of the axis.

Bracteoles broadly elliptic to transversely elliptic or broadly ovate to depressed-ovate, 1.0–1.5 mm long, 1.0–1.3 mm wide, keeled, obtuse; abaxial surface scabrous about the keel, otherwise glabrous; margins minutely ciliolate. *Sepals* ovate to broadly ovate, 1.5–2.2 mm long, 1.2–1.5 mm wide, obtuse; adaxial surface glabrous; abaxial surface straw-coloured or pale green, sometimes flushed pink, glabrous, with prominent venation, at least at fruiting; margins ciliolate with hairs < 0.05 mm long. *Corolla tube* green, sometimes partially flushed pink-purple, ellipsoid to obovoid, longer than the sepals, 2.4–3.0 mm long, 1.5–2.0 mm wide, external surface glabrous, internal surface with 5 densely hairy, raised, cushion-like outgrowths¹ just below the lobe bases, the remainder glabrous. *Corolla lobes* pale green, shorter than the tube, 1.6–2.0 mm long, 0.8–1.0 mm wide, spreading from close to the base and ± straight to gently recurved, external surface glabrous, internal surface with a subapical, ± gently curved band of straight ± smooth hairs, the remainder finely papillose or sometimes with a few long basal hairs. *Anthers* fully exerted from the corolla tube and held at right angles to the floral axis at dehiscence, 0.6–1.0 mm long, apex ± truncate. *Filaments* terete, 0.5–0.6 mm long, sparsely hairy in the lower half, attached to the anther 1/2–2/3 above base, adnate to the tube just below the sinuses. *Nectary* annular, ± truncate to shallowly lobed, 0.3–0.5 mm long, glabrous. *Ovary* globose or depressed-globose, 0.6–1.0 mm long, 0.7–1.0 mm wide, glabrous, 4–6-locular (usually 5-). *Style* 0.8–1.3 mm long, glabrous, well-differentiated from the ovary apex, included within the corolla tube; stigma not expanded. *Fruit* strongly depressed-obovoid, 3.4–4.0 mm long, 5.5–7.0 mm wide, much longer than the sepals, gynophore absent; surface barely rugulose, longitudinally ribbed, mesocarp poorly developed; style shed or not, at maturity. (Figure 1)

Diagnostic characters. *Acrotriche platycarpa* is distinguished by the following character combination: leaves narrowly oblong or narrowly elliptic, sharply pungent, with recurved margins; inflorescences 2–6-flowered, axillary, or arising from bare nodes just below the current leaves; fruit strongly depressed-obovoid 3.4–4.0 mm long, 5.5–7.0 mm wide.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 11 Jan. 2022, K. Walkerden & B. Husbands KSW0222 (PERTH); 11 Jan. 2022, K. Walkerden & B. Husbands KSW0422 (PERTH); 11 Jan. 2022, K. Walkerden & B. Husbands KSW0522 (PERTH); 14 July 2022, K. Walkerden & Julie Waters KSW9222B; 24 Sep. 2021, J. Waters & K. Walkerden KSW5221 (PERTH).

Distribution and habitat. Currently known only from a small area south-east of Cascade in the south of the Mallee bioregion. Grows in alkaline, grey, fine sand or light loam over clay, sometimes with laterite. Associated vegetation is mallee woodland over dense shrubs, with the following species among those recorded in close proximity: *Eucalyptus forrestiana*, *E. kessellii*, *Melaleuca subfalcata*, *M. societatis*, *M. hamata*, *Daviesia aphylla* and *Beyeria sulcata*. Other epacrids in the immediate area are *Styphelia intertexta*, *Lissanthe rubicunda*, *Leucopogon canaliculatus*, *L.* sp. Newdegate, *Acrotriche* sp. Israelite Bay and a narrow-leaved variant of *A. cordata*.

Phenology. The only flowering collection was made in the middle of July, but it is clear from this material that flowers would continue to be produced at least into August. Mature fruit has been collected in January.

Etymology. From the Greek *platys* (flat, wide) and *-carpus* (fruited), a reference to the distinctive fruit shape of the new species.

¹This character is illustrated in Hislop 2007: 291, figure 11

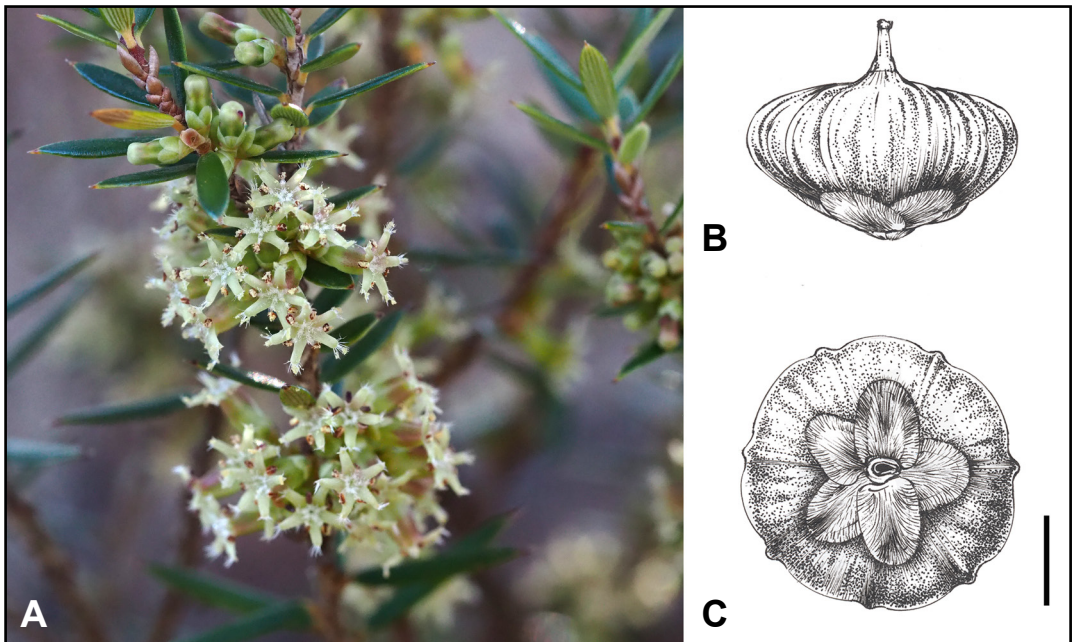


Figure 1. *Acrotriche platycarpa*. A – flowering branchlet *in situ*.; B – fruit, side view; C – fruit, view from below. Scale bar = 2 mm. Vouchers K. Walkerden & J. Waters KSW9222A (A), K. Walkerden & B. Husbands KSW0522 (B, C). Photograph by Katherine Walkerden. Drawings by Hung Ky Nguyen.

Conservation status. At this stage the species is only known from a roadside population of a couple of dozen plants scattered over about 1.5 kilometres. However, the habitat appears to be a common one in the general area and this part of the south coast of Western Australia is relatively well-vegetated. The potential for discovery of new populations therefore appears quite high. *Acrotriche platycarpa* will be listed as Priority One under Conservation Codes for Western Australian Flora (T. Llorens pers. comm.).

Affinities. *Acrotriche ramiflora* R.Br. is the only other Western Australian species that has similarly narrow, sharply mucronate leaves with recurved margins. Because it also occurs in near south-coastal localities it is therefore the congener most likely to be confused with *A. platycarpa*. The new species differs from *A. ramiflora* in having a fewer-flowered inflorescence (2–6-flowered *cf.* 6–11 in *A. ramiflora*) which is either axillary or arising from bare nodes a little below the current leaves (*cf.* obviously ramiflorous with the flowers usually produced well below the current leaves). An obvious difference is in the fruit, with *A. platycarpa* having a strongly depressed-obovoid drupe, 5.5–7 mm wide, compared to the globose or broadly obovoid fruit, 3–4 mm wide, of *A. ramiflora*. Even in the sterile condition though the two should still be readily distinguishable. Leaves of the new species are usually steeply antrorse in orientation, with the adaxial and abaxial surfaces strongly discoloured and with the veins on the abaxial surface contrasting strongly with the much paler intercostal tissue, giving a striped appearance. In *A. ramiflora* by contrast the leaf orientation is shallowly antrorse to shallowly retrorse, the two surfaces less obviously discoloured and the abaxial veins only slightly darker than the intercostal tissue.

Acrotriche parviflora (Stschegl.) Hislop also has strongly discoloured leaves and is known to occur as far east as the Ravensthorpe area. However, the two should not otherwise be confused because that species has innocuous leaf tips and the corolla lobe hairs are in a strongly crescent-shaped formation rather than a gently curved band.

Updated key to the Western Australian species of *Acrotriche*

1. Corolla white, hairs evenly distributed across the lobes and into the throat of the tube (Borden–Wellstead–Ongerup) **A. dura**
- 1: Corolla predominantly greenish, occasionally yellowish-green or greenish suffused purple; lobes usually with hairs confined to subapical tufts, occasionally with very sparse long hairs scattered across the surface; tube with 5 hair tufts in the throat
2. Leaf with a long, pungent mucro
3. Leaves ovate, occasionally narrowly ovate, 3–6 mm wide, most, or at least some leaves with cordate bases. Corolla throat hairs arising from unmodified epidermal cells. Fruiting endocarp with deep, sharply angular longitudinal ribs (coastal and subcoastal: Toolinna Cove–South Australian border) **A. patula**
- 3: Leaves narrowly ovate, narrowly oblong, narrowly elliptic or linear, 1.3–3.2 mm wide, with cuneate or rounded bases. Corolla throat hairs arising from 5 raised, cushion-like outgrowths. Fruiting endocarp smooth or if with longitudinal ribs apparent then not as above
4. Leaves convex, the margins clearly recurved on dried specimens, intercostal distance between midrib and first veins on either side 0.2–0.3 mm
5. Leaves shallowly antrorse to shallowly retrorse. Inflorescences mostly 6–11-flowered, usually arising from bare nodes well below the leaves. Fruit globose to broadly obovoid, 3–4 mm wide (Stirling Range–Ravensthorpe; Cape le Grand–Israelite Bay) **A. ramiflora**
- 5: Leaves usually steeply antrorse. Inflorescence 2–6-flowered, arising from leaf axils or from bare nodes a little below the current leaves. Fruit strongly depressed-obovoid, 5.5–7 mm wide (Cascade area) **A. platycarpa**
- 4: Leaves slightly concave, flat or slightly convex, if the margins \pm recurved on dried specimens the intercostal distance between midrib and first veins *c.* 0.5 mm (Kondinin–Gt Eastern Hwy–Bremer Range–Lake King) **A. lancifolia**
- 2: Leaf apex usually obtuse or subacute, if occasionally acute then with an innocuous tip, never pungent
6. Corolla lobe hairs largely confined to a subapical tuft, the latter arranged in a crescent-shaped formation. Ovary 7–10-locular (Stirling Range–Ravensthorpe; outliers at Tarin Rock and Dongolocking) **A. parviflora**
- 6: Corolla lobe hairs either mostly in a subapical tuft or not, but if so then the tuft a \pm straight transverse band. Ovary 4–5-locular
7. Leaves pruinose, broadly ovate to depressed-ovate, broadly elliptic to transversely elliptic, or occasionally broadly obovate to depressed-obovate. Corolla lobes 0.6–0.7 mm long, with rather sparse hairs scattered across the surfaces. Corolla throat hairs in rather sparse tufts arising from unmodified epidermal cells (Ravensthorpe area) **A. orbicularis**
- 7: Leaves not pruinose, variable in shape, whether ovate, elliptic or obovate, rarely broadly so. Corolla lobes 1.2–1.9 mm long, with hairs in a well-defined subapical tuft (occasionally a very few hairs may be present below the tuft). Corolla throat hairs dense, arising from 5 raised cushion-like outgrowths (mostly coastal, from Leeman along the W and S coasts to Great Australian Bight, but extending well inland in parts of central south coast) **A. cordata**

References

- Council of Heads of Australasian Herbaria (2006–). *National Species List. Acrotriche* R.Br. <https://biodiversity.org.au/name/apni/74477> [accessed 15 March 2023].
- Hislop, M. (2007). A new species and a new combination in *Acrotriche* (Ericaceae: Styphelioideae: Styphelieae), with keys to the Western Australian members of the genus and its closest relative *Lissanthe*. *Nuytsia* 16: 285–297.
- Hislop, M. (2010). A new locally endemic species of *Acrotriche* (Ericaceae: Styphelioideae: Styphelieae). *Nuytsia* 20: 19–25.

