A NEW SUBSPECIES OF HARNIERIA KEMPEANA (ACANTHACEAE) FROM WESTERN AUSTRALIA

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Abstract

Harnieria kempeana (F. Muell.)R.M. Barker subsp. rhadinophylla Lepschi, a taxon endemic to North West Cape, Western Australia, is described and illustrated. A key to the subspecific taxa of Harnieria kempeana is provided.

Introduction

Harnieria kempeana (F. Muell.)R.M. Barker [syn. Sarojusticia kempeana (F. Muell.)Bremek. ex Hj. Eichler] has been considered to have a disjunct range in the eremean regions of central and western Australia. Two subspecies have previously been recognised: subsp. kempeana in the Alice Springs area of the Northern Territory, and subsp. muelleri (R.M. Barker)R.M. Barker in the Murchison and Gascoyne regions of Western Australia (Barker 1986). A third subspecies, endemic to the Cape Range area south-south-west of Exmouth, Western Australia, has only recently been recognised as a new taxon within H. kempeana, and is here described as new.

There is disagreement as to generic limits within the tribe Justicinae, of which Harnieria Solms-Laub. is a member; these are discussed by Barker (this volume), whose concepts are followed here.

Taxonomy


For descriptions, notes and illustrations of H. kempeana subsp. kempeana and subsp. muelleri (as Sarojusticia) see Barker (1986).

Key to subspecies of Harnieria kempeana

1 Leaves and leaf-like bracts narrowly to very-narrowly oblong or ± linear (less often narrowly to linear-obovate or elliptic, very rarely obovate), lamina (2.8-) 6–20 times longer than broad; margin always entire. Exmouth area, Western Australia..............................................subsp. rhadinophylla

1: Leaves and leaf-like bracts orbicular to ovate, or elliptic to obovate or narrowly obovate, lamina 1.2–4.3 times longer than broad; margin entire, irregularly crenate or 2–5 toothed

2 Leaves and leaf-like bracts distinctly 2–3 (-5) toothed along one side, orbicular to ovate. Stigma distinctly capitate. Hairs on stems straight, spreading. Alice Springs area, Northern Territory ...........subsp. kempeana

2: Leaves and leaf-like bracts entire to irregularly crenate, orbicular to elliptic or obovate to narrowly obovate. Stigma subcapitate. Hairs on stems usually retrorse to recurved, generally appressed. Eremean Western Australia..............................................subsp. muelleri

Harnieria kempeana (F. Muell.)R.M. Barker subsp. rhadinophylla Lepschi, subsp. nov.

A subsp. muelleri lamina anguste ad angustissimae oblonga aut aliquantum linearis, interdum anguste ad angustissimae lineare-obovata aut lineare-elliptica, longitudine (2.8-) 6–20 pllo longiora quam latae, margine semper integro differt.
Harnieria kempeana subsp. rhadinophylla


Erect or sprawling, spreading, straggly shrub to c. 1 m; vegetative parts, calyx, corolla and capsule densely hairy with short, spreading, whitish eglandular hairs (“conical bristles” of Barker 1986). Leaves and leaf-like bracts subsessile or petiole to 1.5 mm long; lamina narrowly to very-narrowly oblong or ± linear, less often narrowly to linear-ovate or elliptic, very rarely obovate, 6–33 × 1–4.6 mm, (2.8–) 6–20 times longer than broad; base attenuate, apex obtuse to acute, margin entire, hairy. Inflorescence of solitary, subsessile flowers in axils of leaf-like bracts. Bracteoles similar in form, subsessile or petiole to 0.5 mm long, lamina (1.5–) 2–2.7 × 0.4–0.6 (–0.8) mm, hairy. Calyx 6.5–9 mm long, hairy. Corolla 12–14.5 mm long, deep pink to intense magenta with white palate, hairy externally. Staminal filaments free for 5.0–5.5 mm, proximally hairy, white; upper anther cell 1.0–1.3 mm long, lower anther cell 1.2–1.3 mm long, basal appendage 0.4–0.5 mm long. Ovary glabrous, sparsely hairy distally; style 6.0–9.0 mm long with scattered hairs in the proximal portion, stigma subcapitate. Capsule (7–) 8–10 mm long, glabrescent. Seeds ± ovate, flattened, verrucose, pale brown, turning dark brown upon maturity. Fig. 1.

Specimens examined (all cited)

WESTERN AUSTRALIA: A.S. George 1311, Cape Range, N of Charles Knife road, 30.viii.1960 (CANB, PERTH 2 sheets); A.S. George 6547, W of No. 2 oil well site, Cape Range, 23.v.1965 (PERTH); L. Sweedman 3435, Off Yardie Creek road, 19.ix.1994 (KPBG); T. Tapper 64, Cape Range National Park, Pilgramunup Gorge, 1.viii.1987 (PERTH).

Distribution: Currently known only from the Cape Range, Western Australia, south-southwest of Exmouth. Map 1.

Ecology

Detailed ecological data is scant, but the new taxon is apparently restricted to areas of limestone, where it occurs along creeks and gorges (rocky watercourses are also the preferred habitat of the other subspecies of H. kempeana (see Barker 1986)). At the type locality, the habitat was described as the edge of a small floodplain next to a creek running between limestone ridges, with the substrate as a humus layer over rich, brown calcareous loam with some calcareous pebbles. Vegetation at the type locality was Eucalyptus cf. hamersleyana mallee low open forest to low closed forest over Acacia alexandri, A. pyrifolia (spindly form), Senna artemisioides subsp. oligophylla (Cape Range form) high open shrubland over Olearia sp. shrubland, with a variety of grasses, herbs and shrubs as minor components. Label data on Sweedman 3435 records Grevillea, Ipomoea and Acanthocarpus as associated vegetation.

Phenology: Flowering and fruiting recorded May to September.

Notes

Variation in Harnieria kempeana appears to be clinal (supporting Barker’s suggestion (pers. comm.) that the disjunct populations are relicts of a once wider distribution), with leaves becoming shorter and broader, and also with a greater degree of incision and lobing of the leaf margin, from west to east within the species range. Subsp. rhadinophylla is the western extreme of this variation, possessing very narrow leaves with consistently entire margins. The indumentum of subsp. rhadinophylla (i.e. short, spreading, whitish eglandular

Fig. 1. Harnieria kempeana (F. Muell.)R.M. Barker subsp. rhadinophylla Lepschi. A, flowering branchlet; B, leaves (broader leaves are from the lower nodes of the branchlet of one portion of this collection). (A, Trudgen 12864; B, George 1311).
hairs) is similar to that of subsp. kempeana, although some collections of subsp. muelleri also have an indumentum of (or approaching) this type (e.g. Blackall 224, De Jong 43481-7, Wilcox 99 (pro parte), all PERTH). The subcapitate stigma of subsp. rhadinophylla is a character also shared by subsp. muelleri.

Conservation status

*CALM Conservation Codes for Western Australia Flora: Priority 2. Although restricted in range, at least two populations are conserved within the Cape Range National Park; oil drilling activities on the North West Cape may be a possible threat to some populations. The type population consisted of approximately 15 plants, with another similar sized population c. 700 metres upstream.

Etymology: From the Greek, rhadinos (slender), and phyllon (leaf), in reference to the narrow leaves of this subspecies in comparison to the other subspecies.

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References


* For definitions of the conservation codes currently being used by the Western Australian Department of Conservation and Land Management see Anon. (1996).