

***Stenanthera localis* (Ericaceae: Epacridoideae: Styphelieae), a new
rarity from Western Australia**

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SHORT COMMUNICATION

Stenanthera localis Hislop *sp. nov.* is the second Western Australian member of the recently reinstated genus *Stenanthera* R.Br. (see Puente-Lelièvre *et al.* 2016) to be formally described. The first, *S. pungens* (Keighery) Hislop, was originally published as a *Conostephium* Benth. (Keighery 2002) before its transfer to *Stenanthera* (Hislop 2016). Both species are currently known only from a single population, but whereas the population of *S. pungens* is large, consisting of at least several hundred plants within a nature reserve, *S. localis* is known from less than 50 individuals spread between a crown and a shire reserve and as such has recently been nominated for listing as Critically Endangered.

A third Western Australian member of the genus, which has for many years been known by the name *Astroloma* sp. Grass Patch (A.J.G. Wilson 110) (Western Australian Herbarium 1998–) and is also of high conservation significance (Smith & Jones 2018), is to be described in a forthcoming paper that will also include an updated description of *S. pungens* and a key to all species.

Stenanthera localis* Hislop, *sp. nov.

Type: Cascade Road, Western Australia [precise locality withheld for conservation reasons], 25 July 2006, *M. Hislop* 3622 (*holo:* PERTH 07350570; *iso:* CANB, MEL).

Conostephium sp. Cascades (R. Bruhn 24/899 CAS), Western Australian Herbarium, in *FloraBase*, <https://florabase.dpaw.wa.gov.au/> [accessed 29 October 2019].

Low, compact *shrubs* to *c.* 50 cm high and 50 cm wide, multi-stemmed at ground level and apparently with a fire-tolerant rootstock. Young *branchlets* with a dense indumentum of \pm incurved, antrorse hairs to *c.* 0.8 mm long. *Leaves* antrorse, usually steeply so; apex long-mucronate, pungent, the mucro \pm straight, 0.6–1.2 mm long; base attenuate; petiole well-defined, 1.2–1.6 mm long, glabrous, often with a white excrescence on young growth; lamina linear, 10–20 mm long, 1.0–1.7 mm wide, 3-veined (the midvein much broader than the 2 laterals), adaxially convex, margins revolute and usually concealing the abaxial surface apart from the midvein, longitudinal axis gently incurved to gently recurved; surfaces markedly discoloured; adaxial surface and revolute margins of the abaxial surface shiny, rugulose, \pm glabrous or with a very sparse indumentum of very short, coarse, antrorse

hairs, a longitudinal groove (corresponding to the midvein) usually evident at least in the lower half; abaxial surface (excluding the recurved margins) much paler, usually only the \pm glabrous outer surface of the midvein evident, with 2 deep grooves between the recurved margins and the midvein (where the grooves are not tightly closed the shortly hairy, lateral surfaces of the veins are exposed). *Inflorescence* axillary, deflexed to pendulous; axis 1.4–2.3 mm long, partly obscured by imbricate bracts, hairy. *Axis bracts* 6–8, ovate to broadly ovate. *Floral bracts* 2–4, ovate to elliptic, 2.8–5.8 mm long, 2.0–3.5 mm wide (refer to notes below), red at least in the upper half, obtuse, mucronulate. *Bracteoles* elliptic, 7.0–9.2 mm long, 3.3–4.5 mm wide (refer to notes below), obtuse, mucronate; abaxial surface glabrous, red (at least in the upper half) fading to pale brown post-anthesis, multi-veined but mostly \pm smooth or scarcely striate towards the apex; adaxial surface glabrous; margins apparently glabrous but very minutely ciliolate under high magnification. *Sepals* narrowly ovate to narrowly obovate, 10.5–13.0 mm long, 2.7–4.5 mm wide (refer to notes below), subacute to acute, mucronate; abaxial surface glabrous, red at least in the upper half, fading to pale brown post-anthesis, multi-veined but mostly \pm smooth or scarcely striate towards the apex; adaxial surface glabrous; margins minutely ciliolate under high magnification. *Corolla tube* narrowly ellipsoid to narrowly obovoid, shorter than the sepals, 9.5–11.5 mm long, 4.3–5.4 mm wide, exposed portion red; outer surface glabrous in basal 1/2–3/4, sparsely hairy distally; inner surface with 5 appendages near the base and a few scattered hairs; appendages retrorse, decurrent, transversely aligned, the free portion 1.0–1.5 mm long with distinctly incurved margins, margins and upper surface with hairs to *c.* 0.8 mm long. *Corolla lobes* red, erect basally, spreading slightly in the upper 1/4, 4.0–5.2 mm long, 1.8–2.8 mm wide, much shorter than the tube; outer surface with a moderately dense indumentum of antrorse hairs for most of the lobe length, becoming papillose towards the tip; inner surface with scattered hairs in the lower 1/2, a dense zone of straight, ornamented hairs in the central portion, and papillose towards the tip. *Filaments* distinctly flattened, glabrous, 2.0–2.5 mm long, 0.8–1.5 mm wide, adnate to the tube just below the sinuses, attached 2/3–3/4 above anther base. *Anthers* yellow, 1.7–2.2 mm long, fully exerted from the corolla tube but presented below the erect corolla lobe bases, apex shallowly emarginate to \pm truncate. *Nectary* annular, 0.5–0.7 mm long, truncate, glabrous. *Ovary* globose, 1.2–1.3 mm long, 1.2–1.3 mm wide, glabrous, 5-locular. *Style* 13.0–15.5 mm long, minutely scabrous towards the apex otherwise glabrous, abruptly differentiated from the ovary apex, exerted beyond the corolla tube and the erect corolla lobe bases; stigma distinctly expanded. *Fruit* not seen. (Figure 1)

Diagnostic characters. *Stenanthera localis* can be distinguished from the other western members of the genus by the following character combination: growth habit low and compact (to *c.* 50 cm high and 50 cm wide); petiole relatively long (1.2–1.6 mm long) and glabrous; inflorescence deflexed to pendulous; sepal margins minutely ciliolate at high magnification (appearing more or less glabrous to the naked eye); outer surface of corolla lobes hairy with a distinct zone of papillae towards the tip; anthers yellow, 1.7–2.2 mm long; and style 13.0–15.5 mm long.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 31 Aug. 2010, *E.D. Adams, J. Ford & C.D. Turley* EA 635 (PERTH); 11 Aug. 1999, *R. Bruhn* 24/899 CAS (PERTH).

Distribution and habitat. *Stenanthera localis* is known only from a small area in the district of Cascade in Western Australia's Mallee bioregion where it grows on yellow, sandy loam in mallee woodland with a rather dense, shrubby understorey. Associated species include *Eucalyptus tenera*, *E. forrestiana*, *Banksia media*, *Melaleuca subfalcata*, *M. pulchella*, *Grevillea pectinata* and *Lissanthe rubicunda*.

It is noteworthy that of the three species of Western Australian *Stenanthera*, *S. localis* is the only one

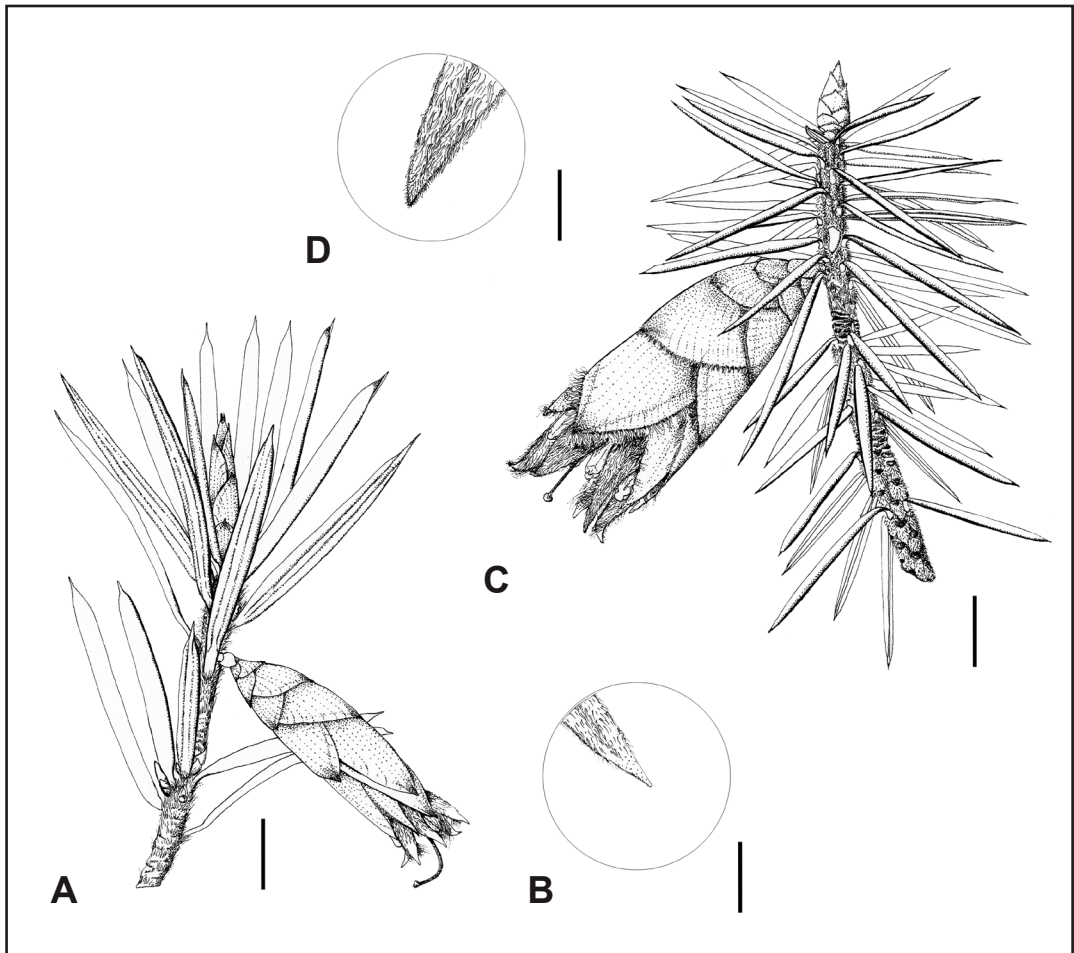


Figure 1. Comparison of flowering branchlets of *Stenanthera localis* and *S. pungens*. *Stenanthera localis*. A – flowering branchlet; B – detail of external corolla tip. *Stenanthera pungens*. C – flowering branchlet; D – detail of external corolla tip. Scale bars = 4 mm (A, C), 2 mm (B), 2.5 mm (D). Drawn by Cielito Marbus from *M. Hislop s.n.* (A, B); *M. Hislop 4709* (C, D).

not to be associated with saline landscapes: *S. pungens* is known to occur on dunes in proximity to a large salt lake while *Astroloma* sp. Grass Patch grows near the edges of salt lakes and saline drainage channels.

Phenology. The only collections of the species have been made in August; however, these are in late flower suggesting that the main flowering period is likely to be from early to mid-winter.

Etymology. From the Latin *localis* (local, belonging to a given place), a reference to its very restricted geographical range.

Vernacular name. Rare Flame Heath.

Conservation status. Conservation Codes for Western Australian Flora: Priority One (Smith & Jones 2018, as *Conostephium* sp. Cascades). Known only from a single, small population. Since its recognition

in 2009, this species has been the subject of a systematic but unsuccessful search effort by Emma Massenbauer, regional Conservation Officer with the Department of Biodiversity, Conservation and Attractions, which has resulted in this species being nominated for listing as Critically Endangered.

Affinities. Of the other two Western Australian species of *Stenanthera*, only *S. pungens* has a pendulous inflorescence axis and hence is the only one likely to be confused with *S. localis*. There are several easily interpreted differences between the two species. In terms of growth habit, *S. localis* is a low, compact shrub to about 50 cm high and 50 cm wide whereas *S. pungens* is significantly larger, growing to about 1.9 m high and 2 m wide (although is more commonly *c.* 1.5 m by 1.5 m). Another vegetative difference is to be found in the petioles, which are glabrous in *S. localis* and 1.2–1.6 mm long but hairy in *S. pungens* and 0.5–1.0 mm long. The branchlet hairs of *S. localis* are also noticeably longer than those of *S. pungens* (to *c.* 0.8 mm long *cf.* to *c.* 0.4 mm long).

The most easily distinguished floral difference relates to the margins of the bracts, bracteoles and especially the sepals. These appear glabrous in *S. localis* (although are in fact minutely ciliate under high magnification), but are obviously ciliate in *S. pungens*, with white hairs up to 1 mm long. The hairs on the outer surface of the corolla lobes of *S. localis* are replaced towards the tip by a zone of papillae whereas in *S. pungens* the outer surface is hairy throughout and the indumentum denser. Another interesting floral difference is to be found in the posture of the basal appendages of the inner corolla tube: these have distinctly incurved margins in *S. localis* but are quite flat in *S. pungens*. There is also a difference in flower size between the two species, with *S. localis* having mostly smaller features, as follows (measurements for *S. pungens* given in parenthesis): corolla tube 10.0–11.5 mm long (13.0–16.8 mm); corolla lobes $4.0\text{--}5.2 \times 1.8\text{--}2.8$ mm ($5.0\text{--}6.8 \times 2.8\text{--}3.5$ mm); anthers 1.7–2.2 mm long (3.0–3.5 mm); and style 13.0–15.5 mm long (18.8–22.0 mm).

Stenanthera conostephioides Sond. from South Australia and Victoria has a similar, pendulous inflorescence to that of *S. localis* and *S. pungens*. It is readily distinguished from both species by its longitudinal corolla tube appendages (i.e. they are parallel to the floral axis rather than transversely orientated) and its leaves, which have more veins (5–7(–9) *cf.* 3) and a narrower mid-vein (0.08–0.2 mm wide *cf.* 0.3–0.4 mm wide) that is not or scarcely wider than the others (*cf.* mid-vein always much wider).

Notes. The width of the floral bracts, bracteoles and sepals was taken from rehydrated flowers in natural posture, i.e. they were not flattened before measurement. This method was preferred despite its inherent imprecision because the curvature of these structures is so extreme that they often split or become pleated when attempts are made to flatten them.

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