

SHORT COMMUNICATION

**Description of a new short-range endemic and a replacement name in
Leucopogon (Ericaceae: Styphelioideae: Styphelieae)**

Leucopogon incisus Hislop, *sp. nov.*

Typus: Blackwood River National Park, Western Australia [precise locality withheld for conservation reasons], 26 September 2014, *M. Hislop* 4367 (*holo*: PERTH 08604630; *iso*: CANB, MEL, NSW).

Delicate, erect or sprawling *shrubs* to *c.* 40 cm high and 60 cm wide, single-stemmed at ground level from a fire-sensitive rootstock. Young *branchlets* glabrous. *Leaves* helically arranged, steeply antrorse, narrowly ovate to narrowly elliptic, 3.0–7.5 mm long, 0.7–1.3 mm wide; petiole usually rather obscure, to *c.* 0.3 mm long, glabrous; base attenuate to cuneate; apex acute; lamina < 0.1 mm thick, adaxially convex with recurved margins, or occasionally \pm flat, straight along the longitudinal axis; surfaces glabrous, \pm concolorous or the abaxial surface a little paler; adaxial surface with 3 veins evident towards the base only; abaxial surface with 3–5 pale, primary veins, \pm flat and smooth between the veins; margins glabrous or with occasional long hairs to 0.5 mm long. *Inflorescences* erect, terminal and axillary, often forming dense, head-like conflorescences towards the ends of the flowering branchlets; axillary inflorescences sometimes extending down the flowering branchlets for many nodes (up to *c.* 20); axis 1.5–4 mm long with 2–7 flowers; axis indumentum of short, moderately dense hairs, 0.05–0.10 mm long; flowers erect, with a short pedicel, up to *c.* 0.3 mm long, above the bracteoles. *Fertile bracts* abruptly differentiated from upper leaves, narrowly ovate, acute. *Bracteoles* narrowly ovate-elliptic, 0.8–1.0 mm long, 0.4–0.5 mm wide, acute, keeled; abaxial surface glabrous; margins glabrous or minutely ciliolate. *Sepals* narrowly ovate-elliptic, 1.5–2.0 mm long, 0.5–0.7 mm wide, acute; abaxial surface glabrous, greenish with obscure venation; margins glabrous or minutely ciliolate with hairs to *c.* 0.08 mm long. *Corolla tube* white or pale pink, narrowly campanulate to \pm cylindrical, slightly to distinctly longer than the sepals, 1.4–1.8 mm long, 0.6–0.7 mm wide, glabrous externally, internal surface with hairs extending to a point *c.* level with the anther bases. *Corolla lobes* white or pale pink, usually shorter than the tube, sometimes \pm the same length, \pm spreading from very close to the base and recurved, 1.2–1.5 mm long, 0.4–0.5 mm wide at base, glabrous externally, internal surface densely bearded, the indumentum white, 0.4–0.5 mm long near apex, hairs in the upper half straight, distinctly ornamented and clavate. *Anthers* partially exerted from tube (by *c.* 1/3 of their length), 0.8–1.2 mm long, including sterile tips, distinctly recurved at the apex. *Filaments* terete, very short, 0.1–0.2 mm long, adnate to tube just below the sinuses, attached to anther 2/3–3/4 above base. *Ovary* slightly compressed, narrowly ellipsoid, 0.5–0.7 mm long, 0.3–0.4 mm wide, glabrous, 2-locular. *Style* 0.2–0.3 mm long, abruptly differentiated from ovary apex, included within the corolla tube; stigma not or scarcely expanded. *Nectary* annular, lobed, longitudinally grooved below the lobe sinuses, 0.15–0.20 mm long. *Fruit* longer than the calyx, 1.8–2.3 mm long (including the gynophore), 1.0–1.3 mm wide, strongly compressed, elliptic in outline, glabrous, minutely papillate, but otherwise smooth (i.e. lacking the raised reticulum that is indicative of a mesocarp), with two shallow, median longitudinal grooves (one on either face); apex produced into two lobes as the fruit matures, with a sharply defined notch between; endocarp thin, crustaceous; style persistent, the lower portion obscured by the lobes. (Figure 1)

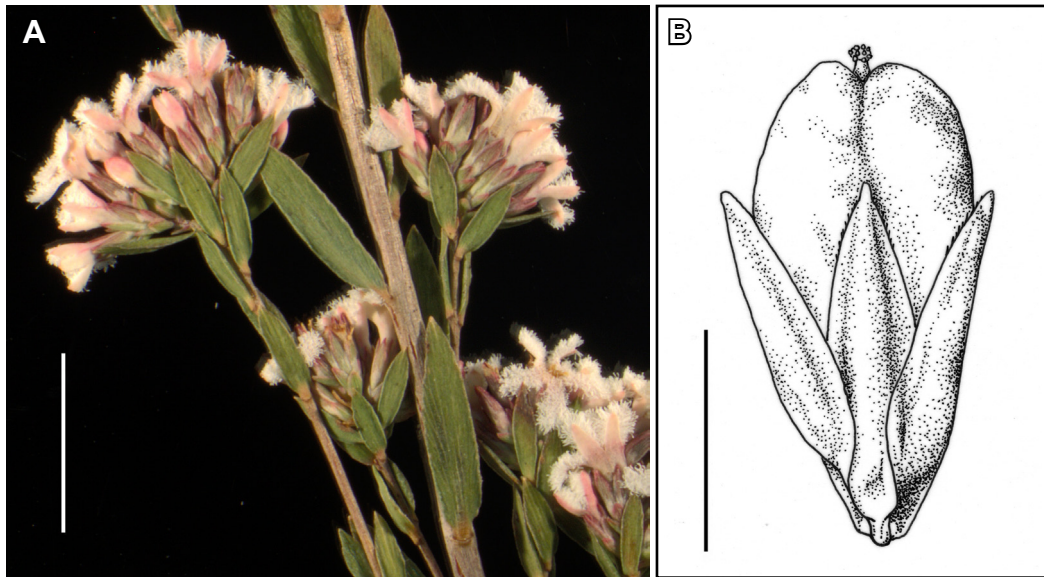


Figure 1. *Leucopogon incisus*. A – photograph of flowering branchlet from *M. Hislop* 4367; B – fruit. Scale bar = 1 cm (A), 1 mm (B). B drawn by Skye Coffey from *M. Hislop* 4376.

Diagnostic characters. A distinctive species distinguished from all others by the following character combination: narrowly ovate or narrowly elliptic leaves with recurved margins, glabrous branchlets, corolla tube longer than the sepals and strongly compressed fruit with a distinct apical notch.

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 26 Sep. 2014, *M. Hislop* 4368 (PERTH); 23 Nov. 2014, *M. Hislop* 4376 (CANB, PERTH); 30 Oct. 1948, *R.D. Royce* 3009 (PERTH).

Distribution and habitat. Known from a small area in the far south of the Jarrah Forest bioregion (Department of the Environment 2013), where it is growing in open Jarrah woodland on a winter-damp sandy flat. Associated species include *Anarthria prolifera*, *Kingia australis*, *Sphenotoma gracilis* and *Hibbertia hypericoides*.

Phenology. The little that is known about this species suggests that the flowering period may be a lengthy one, which probably peaks in September and October. The three collections made during those months all had abundant flowers, with some fruit also present, indicating that flowering commenced many weeks earlier. A collection made in the last week of November (*M. Hislop* 4376) was mostly fruiting but a few plants from the population were still flowering strongly at that time.

Etymology. From the Latin *incisus* (cut deeply and sharply), in reference to the fruit apex which is characteristically notched.

Conservation status. To be listed as Priority Two under Department of Parks and Wildlife Conservation Codes for Western Australian Flora (A. Jones pers. comm.). *Leucopogon incisus* is currently known from one population in Blackwood River National Park. The fact that this species was for so long represented by just a single collection at the Western Australian Herbarium, despite occurring in a relatively well-collected part of the state, suggests that it is likely to be a short-range endemic. Although the species' susceptibility to the root-rot pathogen *Phytophthora cinnamomi* Rands. is as

yet unconfirmed, there is a likelihood that, in common with many other epacrids (Keighery 1996), it will be vulnerable.

Affinities. Because of its distribution, habitat preference and very fine growth habit, *L. incisus* is most likely to be confused with *L. gilbertii* Stschegl. or the locally occurring members of the *L. gracilis* R.Br. group (i.e. *L. paradoxus* Hislop and *L. tenuicaulis* Hislop). With the last two species it shares the unusual character of having a corolla tube longer than the sepals. It is readily distinguished from all three, however, by leaf curvature, having leaves that are adaxially convex with recurved margins (some leaves \pm flat), rather than strongly concave or involute.

The most taxonomically significant character differences between *L. incisus* and the three species mentioned above are those relating to the ovary and fruit. While all have fruit that are more or less compressed, bi-locular and with a crustaceous endocarp, only *L. incisus* has the fruit apex produced into two lobes to form a distinct notch with the short style barely longer than the lobes at maturity (Figure 1B). By comparison, in *L. paradoxus* the fruit apex is more or less acute and the long style is shed at maturity (Hislop 2009b: 222); in *L. tenuicaulis* the apex is a fleshy rim, which is produced vertically so as to almost completely obscure the style at maturity (Hislop 2009b: 226). The fruit of *L. gilbertii* is dry, tiny (< 0.6 mm long), obovate in outline, with a terminal rim and a concave apical surface about the style base. *Leucopogon incisus* also differs from these species in having a wholly glabrous, rather than variously hairy, ovary.

The fruit character of *L. incisus* (Figure 1B) is very similar to that of the anomalous species *L. extremus* Hislop & Puente-Lel. (Hislop *et al.* 2012: 205). No other Western Australian species has a comparable fruit and, despite being quite dissimilar in other aspects of their morphology, the two may well prove to be each other's closest relative.

Notes. *Leucopogon incisus* was first collected in 1948 by Bob Royce, a former curator of the Western Australian Herbarium. No further specimens were processed into the Herbarium until the type collection was made 66 years later. The Royce specimen was included in a loan despatched to the Herbarium of New South Wales in the early 1980s and returned in early 2014. Coincidentally, only a few months before the return of the loan, the author had been shown sterile material of the species by an environmental consultant. This confirmed that it was still extant and provided a precise locality for its recollection.

Leucopogon diversifolius* Hislop, *nom. nov.

Leucopogon heterophyllus Hislop, *Nuytsia* 19: 28–32 (2009), *nom. illeg., non* Colenso, *Trans. & Proc. New Zealand Inst.* 20: 198 (1887). *Type:* unmanaged Reserve No. 29713, West Point Rd, 12 km N of South Coast Highway, NW of Munglinup, Western Australia, 27 June 2007, M. Hislop 3713 (*holo:* PERTH 07615302; *iso:* CANB, K, MELB, NSW).

Etymology. From the Latin *diversi-* (various) and *-folius* (-leaved), a reference to the variable leaf morphology of the species.

Note. It has recently come to my attention that in an earlier paper (Hislop 2009a) I erred in the choice of epithet for a new species, the name *L. heterophyllus* having been already applied to a New Zealand species. A new name is therefore required and *L. diversifolius*, which conveys the same meaning, is hereby instated.

Acknowledgements

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References

- Department of the Environment (2013). *Australia's bioregions (IBRA)*, IBRA7, Commonwealth of Australia. <http://www.environment.gov.au/topics/land/national-reserve-system/science-maps-and-data/australias-bioregions-ibra#ibra> [accessed 2 February 2015].
- Hislop, M. (2009a). The taxonomy of *Leucopogon bossiaea* and allied species (Ericaceae: Styphelioideae: Styphelieae) from the central south coast of Western Australia. *Nuytsia* 19: 17–35.
- Hislop, M. (2009b). New taxa in the *Leucopogon gracilis* group (Ericaceae: Styphelioideae: Styphelieae). *Nuytsia* 19: 211–228.
- Hislop, M., Puente-Lelievre, C. & Crayn, D. (2012). *Leucopogon extremus* (Styphelieae, Styphelioideae, Ericaceae), a remarkable new species that expands the morphological circumscription of *Leucopogon sens. str.* *Australian Systematic Botany* 25: 202–209.
- Keighery, G.J. (1996). Phytogeography, biology and conservation of Western Australian Epacridaceae. *Annals of Botany* 77: 347–355.

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