

## A taxonomic review of the *Styphelia blepharolepis* group (Ericaceae: Epacridoideae: Styphelieae)

Michael Hislop

Western Australian Herbarium, Biodiversity and Conservation Science,  
Department of Biodiversity, Conservation and Attractions,  
Locked Bag104, Bentley Delivery Centre, Western Australia 6983  
Email: [Michael.Hislop@dbca.wa.gov.au](mailto:Michael.Hislop@dbca.wa.gov.au)

### Abstract

Hislop, M., A taxonomic review of the *Styphelia blepharolepis* group (Ericaceae: Epacridoideae: Styphelieae). *Nuytsia* 37: 1–16 (2026). The taxonomy of the small, infrageneric *Styphelia blepharolepis* group is updated with the addition of two new species, *S. cranfieldii* Hislop and *S. semitrullata* Hislop & E.A.Br., and descriptions for the three long-established taxa, *S. blepharolepis* F.Muell., *S. densifolia* Hislop, Crayn & Puente-Lel. (until recently, *Leucopogon flavescens* var. *brevifolius* Benth.) and *S. flavescens* (Sond.) F.Muell. A new subspecies, subsp. *stirlingensis* Hislop, is recognised for *S. flavescens*. A morphological synopsis of the group is provided along with a key to species.

### Introduction

The *Styphelia blepharolepis* group (or Group XI) is a small, highly distinctive, infrageneric group established by Puente-Lelièvre *et al.* (2016). The two species, *S. blepharolepis* F.Muell. and *S. ciliosa* Hislop & Puente-Lel. (as *Leucopogon* sp. Moore River), included in that study formed a strongly supported clade. While the other six species here included in the group have yet to be phylogenetically placed with DNA sequence data, the basis for their placement is very strong because of the group's unique fruiting morphology, as detailed below under the Morphological synopsis heading.

Three new species from the group, *S. ciliosa* Hislop & Puente-Lel., *S. capillaris* Hislop & Puente-Lel. and *S. blackallii* Hislop, were recently described in separate papers (Hislop & Puente-Lelièvre 2017; Hislop 2020 and Hislop 2022 respectively). The current paper completes the taxonomic treatment of this Western Australian endemic group by adding a further two new species and one new subspecies. In a recently published interim key to the species groups of *Styphelia* Sm. in Western Australia (Hislop 2021) members of the *S. blepharolepis* group key out at couplet 17.

### Methods

This study was based on an examination of dried specimens housed at the Western Australian Herbarium, together with field observations of all species treated. Details of the methods used to measure plant parts and make other morphological observations are the same as those described in a recent paper (Hislop & Nguyen 2022).

The use of the term 'early seasonal leaves' in the descriptions below follows Powell *et al.* (1997: 16). In many species of *Styphelia* (and other genera in tribe Styphelieae) the first leaves produced during a flush of new growth may look quite dissimilar to the typical adult leaves of the species. They often differ from the latter in shape (usually shorter and broader), curvature, texture and in having distinct hyaline margins. There is usually a transition over several nodes between these 'early seasonal leaves' and typical adult

leaves, although in some species, including *S. flavescens*, treated below, hyaline margins often persist on leaves that otherwise have typical adult morphology.

Distribution maps are available on *Florabase* (Western Australian Herbarium 1998–). Bioregions referred to in the text follow *Australia's bioregions (IBRA)* IBRA7 (Department of Climate Change, Energy, the Environment and Water 2024).

## **Taxonomy of the *Styphelia blepharolepis* group**

### **Morphological synopsis**

*Leaves* helically arranged, mucronate or not, pungent only in *S. blepharolepis*; lamina curvature variable in most species, from adaxially concave to convex, usually plano-convex or biconvex in *S. densifolia* Hislop, Crayn & Puente-Lel.; abaxial surface smooth or variously grooved between the veins, usually glabrous but sparsely hairy in *S. blackallii*. *Inflorescence* arising from the axils of regular, mature leaves or from ‘early seasonal leaves’ (refer Methods above), 1–9-flowered, flowers sessile or pedicellate above the bracteoles or sometimes in *S. flavescens* (Sond.) F.Muell. subsp. *flavescens* also pedicellate below the bracteoles; axis erect, either terminating in a bud-rudiment (in multi-flowered inflorescences) or with a bud-rudiment lacking (in single-flowered inflorescences). *Fertile bracts* present only in multi-flowered inflorescences; sterile bracts absent, except sometimes in *S. blepharolepis*. *Bracteoles* keeled, although sometimes obscurely so, not striate. *Sepals* not striate, venation obscure to conspicuous, usually shorter than the corolla tube (as long as or longer in *S. blackallii* and *S. capillaris*). *Corolla* white. *Corolla tube* internal surface hairy in an apical transverse band of variable width below the lobes, external surface glabrous. *Corolla lobes* erect in the lower 1/3–2/3 and then spreading and recurved; outer surface glabrous; inner surface densely hairy with ± terete, ornamented hairs. *Filaments* terete, attached 1/2–3/4 above anther base, adnate to corolla tube just below the sinus. *Anthers* partially exerted from the tube, by 1/4–7/8 of their length. *Ovary* glabrous, 2-locular, pale green, straw-coloured or pale brown. *Nectary* partite. *Style* minutely scabrous in the upper half, glabrous below, arising from a depression at the ovary apex that tightly envelops, but is free from, the style base, exerted from corolla tube but held within the erect corolla lobe bases, to a point *c.* level with or a little beyond the anther apices; stigma distinctly expanded. *Drupe* ± dry (mesocarp not developed), with a well-defined glabrous or hairy gynophore, narrowly elliptic to narrowly obovate in outline, much longer than the sepals, strongly compressed (linear or very narrowly elliptic in TS), with 3–7 raised longitudinal veins on each surface.

*Notes.* Aspects of the inflorescence and especially fruiting morphology enable the easily recognition of the *S. blepharolepis* group and because the species typically flower over an extended period, fruit at some stage of maturity is usually present. The fruit are strongly compressed, prominently veined and rather leaf-like, especially when immature (illustrated in Hislop & Puente-Lelièvre 2017: 98). They bear no close resemblance to those of any other *Styphelia*. Interestingly, across member species of the group there is little variation of taxonomic significance in the fruiting character, with presence/absence of gynophore hairs the one notable exception. Investigation during this study strongly suggests that only a single ovule within the 2-locular ovary ever develops to fruiting stage.

Most taxa within the group have a single-flowered inflorescence or a combination of single- and multi-flowered. What makes the single-flowered inflorescence seen in this group unique is that it both terminates at the flower (bud-rudiment lacking) and has a complete absence of bracts, fertile or sterile. In those species that also have multi-flowered inflorescences the latter are of the usual kind seen in the genus in that the axis terminates in a bud-rudiment and fertile bracts are present. However, sterile bracts beneath the fertile region are completely lacking, which is at least highly unusual in the genus. Only *S. blepharolepis* has the usual configuration for multi-flowered species with the axis terminating at the bud-rudiment in combination with the presence of fertile and sterile bracts. But even in this species the sterile bracts may sometimes be absent.

**Key to species of the *S. blepharolepis* group**

1. Nectary scales ciliate
  2. Leaves long-mucronate, pungent; inflorescences multi-flowered, most inflorescences > 2-flowered (scattered: Cranbrook–Fitzgerald River NP–Stokes NP).....**S. blepharolepis**
  - 2: Leaves obtuse to acute, with a blunt callus tip; inflorescences 1- or 2-flowered (N of Regans Ford–Mucheia; outliers near Eneabba, Badgingarra & Keysbrook)..... **S. ciliosa**
- 1: Nectary scales glabrous (*S. densifolia* may very occasionally have a very few apical hairs)
  3. Sepal apices long-attenuate
    - 4: Sepals glabrous; leaves narrowly ovate to narrowly elliptic with cuneate to rounded bases and poorly defined petioles, 0.1–0.3 mm long (Restricted: SW of York)..... **S. capillaris**
    - 4: Sepals hairy; leaves narrowly to broadly obovate or narrowly to broadly elliptic with an attenuate to cuneate base and well-defined petioles, 0.3–0.7 mm long (Restricted: Tarin Rock area; Dongolocking area)..... **S. blackallii**
  - 3: Sepal apices obtuse, subacute or acute, never long-attenuate
    5. Young branchlets glabrous or with a very sparse, scarcely discernible indumentum of short hairs; fruiting gynophore glabrous
      6. Leaves narrowly elliptic, elliptic or obovate, 3.0–5.0 mm long, 1.4–2.5 mm wide (widest leaves per specimen, 1.8–2.5 mm); inflorescences 1-flowered, flowers sessile or pedicellate above the bracteoles, with a pedicel to 0.5 mm long; sepals acute to obtuse, 1.0–1.3 mm long, 0.5–0.8 mm wide; corolla tube ellipsoid, narrowly ellipsoid or obovoid, 1.6–2.0 mm long; corolla lobes usually as long as or longer than tube, 0.5–0.7 mm wide; anthers 0.5–0.8 mm long (very scattered: Hopetoun—a little E of Esperance)..... **S. cranfieldii**
      - 6: Leaves ovate, broadly ovate, often ± trullate, elliptic, broadly elliptic or occasionally obovate, 4.0–8.0 mm long, 2.5–4.5 mm wide (widest leaves per specimen, 3.0–4.5 mm); inflorescences 1- or up to 5-flowered, flowers sessile above the bracteoles; sepals acute to subacute, 1.4–1.9 mm long, 0.9–1.0 mm wide; corolla tube narrowly ellipsoid, 2.2–2.5 mm long; corolla lobes shorter than tube, 0.7–0.8 mm wide; anthers 0.8–1.4 mm long (S of Hyden–Lake Magenta–Dunn Rock).....**S. semitrullata**
    - 5: Young branchlets moderately to densely hairy, although hair length sometimes very short; fruiting gynophore hairy
      7. Leaves densely arranged on branchlets, shallowly retrorse to steeply antrorse, lamina planoconvex, biconvex or sometimes adaxially concave (frequently on the same plant), abaxial surface usually grooved, often narrowly and deeply, between the veins; inflorescences of one kind only: single-flowered and terminating at the flower, axis 0.2–0.4 mm long; sepals 1.0–1.4 mm long; mature fruit 4.2–5.0 mm long, 1.2–1.8 mm wide (Fitzgerald River National Park and immediate vicinity)..... **S. densifolia**
      - 7: Leaves more openly arranged on branchlets, variably antrorse, mostly steeply so, lamina usually adaxially concave or sometimes ± flat, abaxial surface smooth to broadly and shallowly grooved between the veins; inflorescences of two kinds often present: single-flowered and terminating at the flower or multiflowered and terminating in a bud-rudiment, axis of single-flowered inflorescences 0.4–1.0 mm, always with some axes > 0.5 mm; sepals 1.4–2.0 mm long; mature fruit 5.0–7.0 mm long, 1.6–2.5 mm wide
        8. Widest leaves per specimen 2.0–3.0 mm; sepals 1.4–1.7 mm long; corolla lobes 2.5–3.1 mm long; style 1.5–2.1 mm long; mature fruit to 2.0 mm wide (W of Two Peoples Bay–Waychinicup National Park).....**S. flavescens**  
subsp. **flavescens**
        - 8: Widest leaves per specimen 1.3–2.0 mm; sepals 1.7–2.0 mm long; corolla lobes 2.0–2.6 mm long; style 1.3–1.7 mm long; mature fruit to 2.5 mm wide (Stirling Range National Park and immediate vicinity).....**S. flavescens**  
subsp. **stirlingensis**

### Species of the *S. blepharolepis* group

***Styphelia blackallii*** Hislop, *Nuytsia* 33: 213–215, fig. 4 (2022). *Type*: Tarin Rock, Western Australia [precise locality withheld for conservation reasons], 12 December 2018, *M. Hislop* 4786 (*holo*: PERTH 09154493; *iso*: CANB, CNS, MEL 2529944, NSW 947041).

*Styphelia* sp. Tarin Rock (W.E. Blackall 1315), Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [before August 2022].

*Distribution and habitat.* An apparently disjunct distribution in the Tarin Rock and Dongolocking areas; in the far west of the Mallee and south of the Avon Wheatbelt bioregions. Grows in heath or open mallee woodland on sandplain, with one record from a clay-loam substrate.

*Conservation status.* Known from two populations in separate nature reserves and from a single plant in a third reserve. Currently listed as Priority Two under Conservation Codes for Western Australian Flora (Western Australian Herbarium 1998–).

*Notes.* At the time the species was described (Hislop 2022) mention was made of a recently collected specimen (*M. Hislop* 4876) from a reserve in the Dongolocking area about 50 km to the west of the known population of *S. blackallii*. Although its morphology was clearly very close to that species it was aberrant in regard to several features and was not included in the species description. The fact that it was only known from a single plant in that reserve made it difficult to assess whether it should be regarded as representing variation within *S. blackallii* or potentially a separate taxon.

Subsequently, a small population has come to light from another reserve in the Dongolocking area (*Hislop* 4958). In regard to critical leaf and floral characters, specimens from this reserve are somewhat intermediate between those seen in typical material from the Tarin Rock area and *Hislop* 4876. I have therefore taken the view that this is best regarded as infraspecific variation. Hence, all are now referred to *S. blackallii* and the circumscription of that species is expanded to include the leaf and floral differences that were listed under the notes heading in the original description. It is noteworthy that the new population is from sandplain, much more similar to its habitat in the Tarin Rock area than the clay-loam substrate from which *Hislop* 4876 was collected.

***Styphelia blepharolepis*** F.Muell., *Fragm.* 6: 48 (1867); *Leucopogon blepharolepis* (F.Muell.) Benth., *Fl. Austral.* 4: 213 (1868). *Type*: ‘In Australia occidentali sinum Great Bight versus’ [south coast of Western Australia], *s. dat.*, *G. Maxwell s.n.* (*syn*: MEL 0075726!, PERTH 01008161!).

Erect, open *shrubs* to *c.* 1.8 m high (usually <1.2 m) and 1.5 m wide, single-stemmed at ground level with a fire-sensitive rootstock. Young *branchlets* with a sparse to dense indumentum of very short hairs, <0.05 mm long. *Leaves* helically arranged, shallowly retrorse to steeply antrorse; apex long-mucronate, pungent, the mucro straight or slightly deflexed, 0.4–1.0 mm long; base usually attenuate or cuneate, occasionally rounded; petiole usually well-defined, 0.5–1.0 mm long, adaxial surface and margins with very sparse, short hairs or ± glabrous, abaxial surface glabrous; lamina shape variable, obovate, narrowly obovate, elliptic, narrowly elliptic, ovate or narrowly ovate, 5.0–15.0 mm long, 2.0–5.0 mm wide, ± concolorous, strongly concave adaxially to slightly convex, longitudinal axis ± straight to slightly recurved; adaxial surface matt, faintly striate, glabrous or with a few basal hairs; abaxial surface matt, glabrous, with 5–9 primary veins, narrowly but openly grooved between the veins; margins often distinctly paler, glabrous or sometimes minutely and irregularly denticulate. *Inflorescence* axillary, erect, arising from the axils of adult leaves or early seasonal leaves, (2)4–9-flowered; axis 2.0–6.0 mm long, bluntly angular, with a dense indumentum, terminating in a bud-rudiment; flowers erect, subsessile or clearly pedicellate above the bracteoles, with pedicels to 0.5 mm long. *Fertile bracts* ovate to broadly ovate, 0.3–1.3 mm long, 0.4–0.7 mm wide, with or without up to 5 sterile bracts beneath the lowest fertile bract. *Bracteoles* broadly ovate to ovate, 0.7–1.1 mm long, 0.6–0.7 mm wide, obtuse to acute;

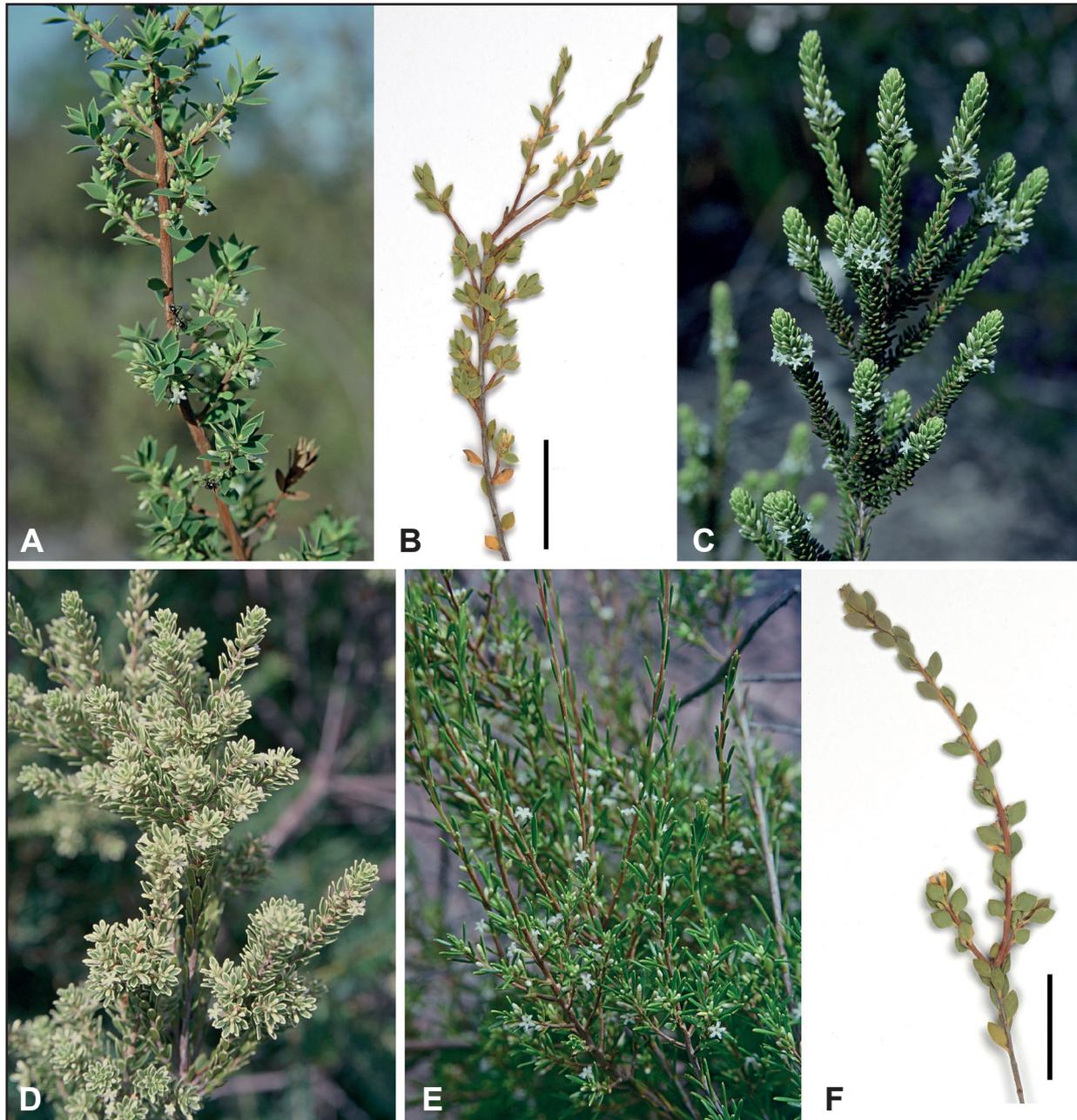
abaxial surface obscurely keeled in the upper half, glabrous; margins ciliolate. *Sepals* ovate or narrowly ovate, 1.0–1.3 mm long, 0.6–0.8 mm wide, obtuse to acute; abaxial surface very pale green, glabrous, midrib and often a vein either side conspicuous; adaxial surface glabrous or with a few basal hairs; margins ciliolate with hairs to *c.* 0.1 mm long. *Corolla tube* white, ellipsoid, narrowly ellipsoid to obovoid or narrowly obovoid, 1.6–2.0 mm long, 1.2–1.5 mm wide, longer than the sepals, glabrous externally, internal surface with an apical band of reflexed hairs, otherwise glabrous. *Corolla lobes* white, usually as long as or longer than the tube, occasionally slightly shorter, 1.6–2.5 mm long, 0.5–0.7 mm wide at base, erect in basal 1/3–1/2, then spreading and recurved, glabrous externally, internal surface with a dense indumentum of  $\pm$  terete, ornamented hairs. *Filaments* terete, 0.2–0.3 mm long, attached to the anther 2/3–3/4 above anther base, adnate to tube just below sinuses. *Anthers* partially exerted from the tube (by 1/2–2/3 of their length), 0.6–0.8 mm long, apex shallowly emarginate. *Nectary* partite, the scales 0.4–0.5 mm long, 0.2–0.3 mm wide, ciliate. *Ovary* pale brown or greenish brown, very narrowly ovoid, slightly compressed, 0.7–0.9 mm long, 0.3–0.4 mm wide, glabrous, 2-locular. *Style* 1.2–1.7 mm long, minutely scabrous in the upper half, glabrous towards the base, arising from a depression at the ovary apex, exerted from corolla tube to a point *c.* level with or a little beyond the anther apices; stigma distinctly expanded. *Fruit* narrowly elliptic in outline, 4.5–5.5 mm long, 1.3–1.9 mm wide, much longer than the sepals, strongly compressed, with a glabrous, sharply ridged gynophore; surface dry with 3–5 raised longitudinal veins; style early deciduous. (Figure 1A)

*Other specimens examined.* WESTERN AUSTRALIA: Moirs homestead track, on N side, Stokes National Park, 11 Jan. 2008, *E.D. Adams & C.D. Turley* 2/0108 (PERTH); Location 6142, Woogenilup Rd North [NE of Mount Barker], 20 Feb. 2003, *S. Barrett* 1071 (PERTH); Plantagenet Location 6148, S of Woogenilup Rd North [NE of Mount Barker], 15 Sep. 2014, *S. Barrett* 2187 (PERTH); Ongerup Rd, 2.2 km N of Boxwood Hill, 5 Feb. 1998, *R. Davis* 5023 (CANB, PERTH); 3.2 km S along Dillon Bay Rd from junction with Borden–Bremer Bay Rd, *c.* 11 km WSW of Bremer Bay, 12 Nov. 2001, *R. Davis* 10120 (PERTH); Geekabee Hill, W of Cranbrook, 14 Jan. 1978, *A.S. George* 15083 (PERTH); Warramurrup Road, 1.7 km from Bremer Bay–Borden Road, W of Bremer Bay, 31 Mar. 2002, *M. Hislop* 2556 (CANB, NSW, PERTH); 1 km W of Kamballup towards Mount Barker, 27 Nov. 1986, *G.J. Keighery & J.J. Alford* 1741 (PERTH); 10 km WNW of Fitzgerald townsite, *c.* 68 km WSW of Ravensthorpe, 12 Aug. 1977, *K. Newbey* 5055 (PERTH); 5.5 km WNW of Bivouac Rocks, Fitzgerald River National Park, 7 Oct. 1977, *K. Newbey* 5092 (PERTH); 0.8 km W of Mt Maxwell turnoff [Fitzgerald River National Park], 2 Aug. 1986, *J.M. Powell* 2395 (HO *n.v.*, K *n.v.*, L *n.v.*, NSW *n.v.*, PERTH); Geekabee Hill, W of Cranbrook, 4 Aug. 1986, *J.M. Powell* 2433A (HO *n.v.*, K *n.v.*, L *n.v.*, NSW *n.v.*, PERTH); quadrat 3, junction of track to Fanny Cove and Stokes Inlet, Stokes National Park, 16 June 2009, *D. Rathbone* 216 (PERTH); Bush Heritage property, Monjebup North Rd, W of Monjebup Rd, NW of Boxwood Hills, 19 Aug. 2016, *E.M. Sandiford* EMS 2335 (PERTH); 643 Boxwood Hill–Ongerup Rd, W boundary track, 300 m N of dam track, 22 Dec. 2013, *J.E. Wajon* 2860 (PERTH).

*Distribution and habitat.* Distributed in several, often more or less discrete population clusters from west of Cranbrook eastwards to Stokes National Park, mostly in the Esperance Plains bioregion but with limited occurrences in the far south of the Jarrah Forest and in the south of the Mallee bioregions. Grows in heath or open mallee woodland, mostly on sandplain but has also been recorded over sandstone, quartzite, laterite and spongolite.

*Conservation status.* This species was previously listed as Priority Four under Western Australian conservation codings, but with its wide geographic distribution, increase in collections and good representation on the conservation estate, it has been delisted following a review (Tanya Llorens, pers. comm.). It is no longer regarded as of conservation concern.

*Notes.* There is considerable variation in branchlet indumentum density and in leaf size, shape and curvature, but the pattern of variation is overlapping in nature and not amenable to the recognition of segregates. *Styphelia blepharolepis* is the only member of the *S. blepharolepis* group in which sterile inflorescence bracts are sometimes present below the flowers. But when present these often co-occur with inflorescences that are bare below the flowers, which is the usual configuration for the group.



**Figure 1.** A – *Styphelia blepharolepis*. Flowering branchlet *in situ*. Voucher M. Hislop 2556; B – *S. cranfieldii*. Scanned image of flowering branchlet. Scale bar = 2 cm. Voucher M. Hislop 4686; C – *S. densifolia*. Flowering branchlet *in situ*. Voucher M. Hislop 3036; D – *S. flavescens* subsp. *flavescens*. Flowering branchlet *in situ*. Voucher M. Hislop 3162; E – *S. flavescens* subsp. *stirlingensis*. Flowering branchlet *in situ*. Voucher M. Hislop 2527; F – *S. semitrullata*. Scanned image of flowering branchlet. Scale bar = 2 cm. Voucher M. Hislop 4683. Photographs by Michael Hislop (A, C, D, E).

***Styphelia capillaris*** Hislop & Puente-Lel., *Nuytsia* 31: 147–150, fig. 1 (2020). *Type*: south-west of York, Western Australia [precise locality withheld for conservation reasons], 16 December 1999, F. Hort, J. Hort & A. Lowrie 859 (*holo*: PERTH 05510449; *iso*: CANB, K, MEL 2502997, NSW 506431).

*Leucopogon* sp. Flynn (F. Hort, J. Hort & A. Lowrie 859), Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [before July 2020].

***Distribution.*** Restricted to one moderately large population in the Darling Range, south-west of York, in the Jarrah Forest bioregion. Grows in heath or open Banksia-Jarrah woodland on white sand.

*Conservation status.* This species is listed as Critically Endangered under State and Commonwealth legislation (State of Western Australia 2025; Department of Environment 2025).

***Styphelia ciliosa*** Hislop & Puente-Lel., *Nuytsia* 28: 97–101, figs 1, 2 (2017). *Type:* eastern boundary of Moore River National Park, 4.5 km north of the south-east corner of park, Western Australia, 27 September 1999, M. Hislop 1695 (*holo:* PERTH 05406013; *iso:* CANB, MEL 2417539, NSW 622383)

*Leucopogon* sp. Moore River (M. Hislop 1695), Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [before March 2017]

*Distribution and habitat.* Occurs rather sporadically from Namming Nature Reserve southwards to north of Muchea, and with morphologically somewhat atypical outliers (Hislop & Puente-Lelièvre 2017: 100–101) near Eneabba, Badgingarra and in the Keysbrook area; in the Geraldton Sandplains and Swan Coastal Plain bioregions. Grows on sandplain, mostly in Banksia woodland.

*Conservation status.* Not currently conservation listed.

***Styphelia cranfieldii*** Hislop, *sp. nov.*

*Type:* north-east of Hopetoun, Western Australia [precise locality withheld for conservation reasons], 21 November 2016, M. Hislop 4686 (*holo:* PERTH 09047581; *iso:* CANB, CNS, HO, K, MEL, NSW).

*Leucopogon* sp. Lake Magenta (K.R. Newbey 3387) *p.p.*, Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [accessed 1 Aug. 2025]

Erect *shrubs* to *c.* 60 cm high and 60 cm wide, single-stemmed at ground level with a fire-sensitive rootstock. Young *branchlets* glabrous, or with a very sparse indumentum of very short hairs, <0.05 mm long. *Leaves* helically arranged, variably antrorse, rarely  $\pm$  patent; apex acute, subacute or sometimes obtuse, with a blunt callus tip; base attenuate or cuneate; petiole usually well-defined, 0.4–1.0 mm long, adaxial surface hairy, abaxial surface glabrous, margins glabrous or with sparse hairs; lamina narrowly elliptic, elliptic or obovate, 3.0–5.0 mm long, 1.4–2.5 mm wide,  $\pm$  concolorous, mostly adaxially concave, sometimes  $\pm$  flat, longitudinal axis usually gently incurved, occasionally  $\pm$  straight; adaxial surface matt, faintly striate, glabrous or with a few basal hairs; abaxial surface matt, glabrous, with 5–7 primary veins, narrowly but openly grooved between the veins; margins with minute, coarse hairs, <0.05 mm long or glabrous. *Inflorescence* axillary, erect, arising from the axils of regular, mature leaves or from early seasonal leaves, 1-flowered; axis 0.1–0.8 mm long  $\pm$  terete, with a dense indumentum, bud-rudiment absent; flowers erect, sessile or pedicellate above the bracteoles, with pedicels to 0.5 mm long. *Bracts* absent. *Bracteoles* ovate to broadly ovate, 0.6–1.0 mm long, 0.5–0.8 mm wide, obtuse to acute; abaxial surface keeled sometimes rather obscurely so, glabrous; margins ciliolate. *Sepals* ovate or narrowly ovate, 1.0–1.3 mm long, 0.5–0.8 mm wide, acute to obtuse; abaxial surface very pale green or cream-coloured, glabrous, venation obscure or with the midrib sometimes evident; adaxial surface with a well-defined basal tuft and a few hairs towards the apex; margins ciliolate with hairs to *c.* 0.1 mm long. *Corolla tube* white, ellipsoid, narrowly ellipsoid or obovoid, 1.6–2.0 mm long, 1.0–1.7 mm wide, longer than the sepals, glabrous externally, internal surface with an apical band of reflexed hair, otherwise glabrous. *Corolla lobes* white, as long as, or longer than, the tube, or occasionally slightly shorter (refer notes below), 1.8–2.5 mm long, 0.5–0.7 mm wide at base, erect in the basal 1/3–1/2 and then spreading and recurved, glabrous externally, internal surface with a dense indumentum of  $\pm$  terete, ornamented hairs. *Filaments* terete, 0.3–0.4 mm long, attached to anther 2/3–3/4 above anther base, adnate to tube just below the sinuses. *Anthers* partially exerted from the tube (by 1/3–1/2 of their length), 0.5–0.8 mm long, apex shallowly emarginate. *Nectary* partite, the scales 0.4–0.6 mm long, 0.2–0.4 mm wide, glabrous. *Ovary* very pale green, very narrowly ovoid, slightly compressed, 0.6–0.8 mm, 0.3–0.4 mm wide, glabrous, 2-locular. *Style* 1.3–2.2 mm long, minutely scabrous in the upper half, glabrous below, arising from a depression at the ovary apex, exerted from corolla tube to a point *c.* level with or a little beyond the anther apices; stigma distinctly expanded.

*Fruit* (possibly slightly immature) narrowly elliptic to narrowly obovate in outline, 4.0–4.5 mm long, 1.5–1.7 mm wide, much longer than the sepals, strongly compressed, with a glabrous gynophore; surface dry, with 3–5 raised longitudinal veins; style early deciduous. (Figure 1B)

*Diagnostic characters.* Within the *S. blepharolepis* group distinguished by the following character combination: branchlets glabrous, or with a very sparse indumentum of very short hairs, <0.05 mm long; leaves with non-pungent apices, narrowly elliptic, elliptic or obovate, 3.0–5.0 mm long, 1.4–2.5 mm wide (widest leaves per specimen, 1.8–2.5 mm); inflorescences 1-flowered, flowers sessile or pedicellate above the bracteoles, with a pedicel to 0.5 mm long; sepals acute to obtuse, never long-attenuate and filiform, glabrous abaxially, 1.0–1.3 mm long, 0.5–0.8 mm wide; corolla tube 1.6–2.0 mm long, longer than the sepals, as long as or shorter than the corolla lobes; corolla lobes 0.5–0.7 mm wide at base; anthers 0.5–0.8 mm long; nectary scales glabrous; fruiting gynophore glabrous.

*Other specimens examined.* WESTERN AUSTRALIA: [localities withheld for conservation reasons] 6 Nov. 1978, *R.J. Cranfield* 1040 (PERTH); 1 Sep. 1962, *C.A. Gardner* 14093 (PERTH); 22 Nov. 2016, *M. Hislop* 4687 (CANB, MEL); 28 Mar. 2017, *M. Hislop* 4700 (PERTH); 23 July 2007, *B. Taylor* HOP 04-03 (PERTH); 5 Oct. 2024, *K.S. Walkerden* KSW705 (CANB, CNS, HO, K, MEL, NSW, PERTH).

*Distribution and habitat.* *Styphelia cranfieldii* has a very scattered, subcoastal distribution between Hopetoun and a little east of Esperance, in the Esperance Plains bioregion. Occurs in open Banksia or mallee woodland, growing in deep white or grey sand. Associated species include *Banksia speciosa*, *Eucalyptus pleurocarpa*, *Adenanthos cuneatus* and *Melaleuca striata*.

*Phenology.* Flowering collections have been made in September and November, but numerous buds on the November-collected specimens indicate that flowering would continue well into early summer. More or less mature fruit was present on one of the flowering specimens collected in November.

*Etymology.* The new species is named for Raymond (Ray), Jeffrey Cranfield (1947–), former botanist and lichenologist with the Western Australian Herbarium (1977–1999). During his career and since retiring, Ray has been a prodigious collector of plants and lichens. Currently there are more than 30000 of Ray's collections at the Western Australian Herbarium. In addition, he has described 21 new plant taxa from a variety of families, including Ericaceae. In 1978 Ray made only the second collection of the plant named here in his honour.

*Conservation status.* To be listed as Priority One under Conservation Codes for Western Australian Flora (Tanya Llorens pers. comm.). A very poorly known species which has yet to be recorded on the conservation estate. It seems likely that this is a very uncommon plant.

*Affinities.* Based on overall, morphological similarity the closest relative of *S. cranfieldii* is likely to be *S. semitrullata*, with which it had previously been included in a broad concept of *L.* sp. Lake Magenta. The most obvious differences between the two are foliar with *S. cranfieldii* having leaves that are narrowly elliptic, elliptic or obovate, 3.0–5.0 mm long, 1.4–2.5 mm wide, and with the widest leaves per specimen, 1.8–2.5 mm wide. In *S. semitrullata* by contrast the leaves are larger, and usually differently shaped: ovate, broadly ovate, often ± trullate, elliptic, broadly elliptic or occasionally obovate, 4.0–8.0 mm long, 2.5–4.5 mm wide, and with the widest leaves per specimen, 3.0–4.5 mm wide.

There are also frequently differences in the configuration of the inflorescence. In *S. cranfieldii* the inflorescences are always single-flowered and terminate at a flower rather than a bud-rudiment, and the flowers may be sessile above the bracteoles or pedicellate with pedicels to 0.5 mm long. While *S. semitrullata* may also have the same single-flowered inflorescence, sometimes they are also multiflowered in the upper axils and terminate in a bud rudiment. And where *S. cranfieldii* is variable in terms of whether the flowers are pedicellate or not, in *S. semitrullata* they are always sessile above the bracteoles.

In terms of flowering difference, critical floral parts of *S. cranfieldii* are generally smaller than those of *S. semitrullata*: sepals 1.0–1.3 mm long, 0.5–0.8 mm wide (*cf.* 1.4–1.9 mm long, 0.9–1.0 mm wide in *S. semitrullata*); corolla tube ellipsoid, narrowly ellipsoid or obovoid, 1.6–2.0 mm long (*cf.* narrowly ellipsoid, 2.2–2.5 mm long); corolla lobes usually as long as or longer than the tube, 0.5–0.7 mm wide (*cf.* corolla lobes shorter than the tube, 0.7–0.8 mm wide); anthers 0.5–0.8 mm long (*cf.* 0.8–1.4 mm); ovary width 0.3–0.4 mm (*cf. c.* 0.5 mm).

There are also significant differences in the preferred habitat of the two species, with *S. cranfieldii* occurring in deep white or grey sand in subcoastal regions of the Esperance bioregion, whereas *S. semitrullata* is a plant of lateritic uplands, well inland in the Mallee bioregion.

The two most easterly collections of the species have the majority of their inflorescences (or all of them in the case of *K.S. Walkerden* KSW705) arising from the axils of deciduous, early seasonal leaves rather than mostly from regular adult leaves, which is the case for the remaining specimens. It is also noteworthy that *Walkerden* KSW705 is the only specimen in which the corolla lobes are shorter than the tube.

Among congeners within the *S. blepharolepis* species group the distributions of *S. blepharolepis* and *S. densifolia* are the closest geographically to that of *S. cranfieldii*. The former is readily distinguished by its long-mucronate, pungent leaf tips, ciliate nectary scales and multiflowered inflorescences. *Styphelia densifolia* differs in its obviously thicker, more densely arranged leaves and in having a hairy fruiting gynophore.

***Styphelia densifolia*** Hislop, Crayn & Puente-Lel., *Austral. Syst. Bot.* 33(2): 149 (2020) [*nom. et stat. nov.*]; *Leucopogon flavescens* var. *brevifolius* Benth., *Fl. Austral.* 4: 213 (1868). *Type*: [Western Australia], 1846–1847, *J. Drummond* IV: 153 (*syn*: K 000348804 image!, P 00760545 image!, PERTH 09008462!; near Mount Bland [Fitzgerald River National Park, Western Australia], *s. dat.*, *G. Maxwell s.n.* (*syn: n.v.*).

Erect, usually open *shrubs* to *c.* 1.5 m high and 1.2 m wide, single-stemmed at ground level with a fire-sensitive rootstock. Young *branchlets* with a moderately dense to dense indumentum of very short hairs, <0.05 mm long. *Leaves* helically arranged, dense, shallowly retrorse to steeply antrorse; apex obtuse to acute, with or without a blunt callus tip; base attenuate; petiole rather obscure to well-defined, 0.1–1.0 mm long, occasionally lacking, adaxial surface and margins hairy, abaxial surface glabrous or sparsely hairy; lamina thick, variable in shape (frequently on the same plant), obovate to very narrowly obovate, elliptic to very narrowly elliptic, oblong or linear, 2.2–10.0 mm long, 0.7–2.1 mm wide, ± concolorous, planoconvex, biconvex or sometimes adaxially concave (frequently on the same plant), longitudinal axis usually straight or gently incurved, less often slightly recurved; adaxial surface shiny, smooth to ± striate, glabrous or with sparse hairs towards the base; abaxial surface shiny, glabrous, with 5 primary veins, usually grooved, often narrowly and deeply, between the veins, occasionally ± smooth; margins not paler than the lamina, glabrous or with a few minute, coarse hairs, <0.05 mm long. *Inflorescence* axillary, erect, arising from the axils of regular, mature leaves, 1-flowered; axis 0.2–0.4 mm long, ± terete, with a dense indumentum, bud-rudiment absent; flowers erect, subsessile or pedicellate above the bracteoles, with pedicels to 0.4 mm long. *Bracts* absent. *Bracteoles* ovate or narrowly ovate, 0.7–0.8 mm long, 0.5–0.7 mm wide, subacute; abaxial surface keeled, glabrous; margins ciliolate. *Sepals* ovate, 1.0–1.4 mm long, 0.5–0.8 mm wide; mostly acute or subacute, sometimes obtuse; abaxial surface pale green or straw-coloured, glabrous, the midrib and 1 or 2 veins on either side well-defined; adaxial surface with a basal hair tuft and a few hairs towards the apex; margins ciliolate with hairs to 0.1 mm long. *Corolla tube* white, usually obovoid, occasionally ellipsoid, longer than the sepals, 1.4–2.4 mm long, 1.2–1.6 mm wide, glabrous externally, internal surface with an apical band of reflexed hairs, otherwise glabrous. *Corolla lobes* white, usually longer than, or occasionally equal to the tube, 2.2–3.0 mm, 0.5–0.6 mm wide at base, erect in basal 1/2–2/3 and then spreading and recurved, glabrous externally, internal surface with ± terete, ornamented hairs. *Filaments* terete, 0.2–0.3 mm long, attached to the anther 1/2–2/3 above anther base, adnate to the tube just below the sinuses. *Anthers* partially exerted from the tube (by 2/3–7/8 of their length), 0.5–0.9 mm long, apex shallowly emarginate. *Nectary* partite, the scales, 0.4–0.6 mm long, 0.2–0.3 mm wide, glabrous or very occasionally with a very few apical hairs. *Ovary* very pale

green or straw-coloured, narrowly ellipsoid, slightly compressed, 0.6–0.8 mm long, 0.3–0.4 mm wide, glabrous, 2-locular. *Style* 1.6–2.3 mm long, minutely scabrous in the upper half, glabrous below, arising from a depression at the ovary apex, exerted from corolla tube to a point *c.* level with or a little beyond the anther apices; stigma distinctly expanded. *Fruit* narrowly elliptic or narrowly obovate in outline, 4.2–5.0 mm long, 1.2–1.8 mm wide, much longer than the sepals, strongly compressed, with a hairy, sharply ridged gynophore; surface dry, with 3–5 raised, longitudinal veins; style early deciduous. (Figure 1C)

*Other specimens examined.* WESTERN AUSTRALIA: East Mt Barren, 28 Oct. 1963 *T.E.H. Aplin* 2717 (CANB *n.v.*, PERTH); between Gairdner River and West Mt Barren, 7 Oct. 1967, *A.R. Fairall* 2304 (PERTH); near Eyre Range, 18 Sep. 1925, *C.A. Gardner s.n.* (CANB, PERTH); no 2 Rabbit Proof Fence, W of Mt Bland, 28 Oct. 1965, *A.S. George* 6984 (PERTH); Whoogarup Range, SSW of Ravensthorpe, 1 Nov. 1965, *A.S. George* 7186 (PERTH); Fitzgerald River National Park, the first of 4 hills (approaching from the W) on N side of track between Quoin Head and Whalebone Beach, 10 Oct. 2003, *M. Hislop* 3036 (CANB, NSW, PERTH); Fitzgerald River National Park, E slopes close to summit of Mid Mt Barren, 28 Nov. 2002, *M. Hislop, S. Barrett & J.A. Cochran* MH 2877 (PERTH); Fitzgerald River National Park, quartzite ridge S of Thumb Peak, 29 Nov. 2002, *M. Hislop, S. Barrett & J.A. Cochran* MH 2891 (CANB, NSW, PERTH); East Mt Barren, 22 Oct. 1985, *E. & S. Pignatti* 1358 (CANB *n.v.*, PERTH); Mylies Beach near East Mt Barren, 23 Oct. 1985, *E. & S. Pignatti* 1405 (PERTH); Mt Maxwell, lower slopes, 2 Aug. 1986, *J.M. Powell* 2394 (HO *n.v.*, NSW *n.v.*, PERTH); One Tree Hill, walking track, just N of Fitzgerald River National Park, 22 Oct. 2019, *R.W. Purdie* 11791 (CANB, PERTH); quadrat no. F029, hill 1.2 km SE of Thumb Peak summit, Fitzgerald River National Park, 23 Sep. 2011, *D.A. Rathbone* DAR 721 (PERTH); Fitzgerald River National Park, 60 m N of Hamersley Drive, SW of East Mt Barren, 1 Mar. 1989, *I. Salasoo* 61/89 (PERTH); Mt Maxwell Road, Fitzgerald River National Park, 30 Oct. 1983, *P.E. Sanderson* 67 (PERTH); Fitzgerald River National Park, West Mt Barren, E and S slopes, 23 Oct. 1982, *A. Strid* 20962 (PERTH); Fitzgerald River National Park, Hamersley Drive, between Sepulcralis Hill and Quoin Head turnoff, 27 Dec. 2006, *K.R. Thiele* 3145 (PERTH); East Mt Barren, 15 Oct. 1979, *K.L. Wilson* 2880 (NSW *n.v.*, PERTH); along no. 2 Rabbit Proof Fence, *c.* 25 km N of Bremer Bay, 2 Oct. 1966, *P.G. Wilson* 4354 (AD *n.v.*, PERTH).

*Distribution and habitat.* *Styphelia densifolia* is widely distributed in the Fitzgerald River National Park and immediate vicinity, in the Esperance Plains Bioregion. It occurs in open mallee woodland or various heathland habitats, mostly in shallow sandy soils over quartzite, or occasionally over laterite or in deep sand.

*Conservation status.* Locally common in the Fitzgerald River National Park. No conservation coding is required (Tanya Llorens pers. comm.).

*Notes.* Previously recognised as a variety of *S. flavescens*, *S. densifolia* was elevated to species level in 2020 (Crayn *et al.* 2020). However, the two are still likely to be each other's closest relative, being the only species in the *S. blepharolepis* group with a hairy fruiting gynophore. Foliar differences provide the most obvious means of distinguishing between them. In *S. densifolia* the leaves are densely arranged on the branchlets and vary from shallowly retrorse to steeply antrorse often on the same plant. The lamina is usually plano-convex or biconvex, or sometimes concave (with all three states often present on the same plant), and the abaxial surfaces are usually grooved between the veins, often narrowly and deeply. In *S. flavescens* by contrast the leaves are more openly arranged on the branchlets, always antrorse, the lamina noticeably thinner and mostly concave (sometimes flat) with their abaxial surfaces smooth or broadly and openly grooved. The foliar variation on individual plants, in regard to shape, orientation and thickness, is a feature of *S. densifolia*, whereas both subspecies of *S. flavescens* are much less variable in respect to these characters.

There are also useful inflorescence differences between the two. While *S. flavescens* has two inflorescence types, single-flowered and terminating at the flower (bud-rudiment lacking) as well as multiflowered with a terminal bud-rudiment, in *S. densifolia* there is only the former kind. In addition, the inflorescence axis

is consistently shorter (0.2–0.4 mm long) compared to 0.4–1.0 mm in the single-flowered inflorescences of *S. flavescens*. Always with some axes on individual specimens longer than 0.5 mm.

The smaller mature fruit size of *S. densifolia* is another significant difference: 4.2–5.0 mm long and 1.2–1.8 mm wide for *S. densifolia* cf. 5.0–7.0 mm by 1.6–2.5 mm for *S. flavescens*.

**Styphelia flavescens** (Sond.) F.Muell., *Fragm.* 6(42): 33 (1867); *Leucopogon flavescens* Sond. in J.G.C. Lehmann, *Pl. Preiss.* 1(3): 322 (1845). *Type*: ‘In confragosis prope Two-peopled Bay, Plantagenet’ [Western Australia], 24 November 1840, *L. Preiss* 379 (*syn*: BM 001040139 image!, BR 510903 image!, C 10010897 image!, GOET 003223 image!, HBG 507600 image!, K 000348802 image!, L 0006534 image!, LD 1020494 image!, M 0164709 image!, M 0164710 image!, MEL 1512194!, MEL 1512185!, P 00760546 image!, P 00713923 image!, PERTH 03005399!, S 08-5836 image!).

Erect, open *shrubs* to *c.* 1.5 m high and 1.2 m wide, single-stemmed at ground level with a fire-sensitive rootstock. Young *branchlets* with a dense indumentum of short hairs, to *c.* 0.1 mm long. *Leaves* helically arranged, variably antrorse, mostly steeply so; apex obtuse to acute, with a blunt callus tip; base attenuate; petiole usually well-defined, 0.6–1.6 mm long, adaxial surface and margins hairy, abaxial surface glabrous; lamina narrowly or very narrowly obovate to narrowly or very narrowly elliptic, occasionally  $\pm$  linear, 4.0–16.0 mm long, 1.0–3.0 mm wide,  $\pm$  concolorous, usually adaxially concave or sometimes  $\pm$  flat, longitudinal axis usually gently incurved, less often straight to slightly recurved; adaxial surface shiny,  $\pm$  striate, sometimes distinctly so in the lower half, sparsely hairy in the lower half; abaxial surface shiny, glabrous, with 5 primary veins, smooth to broadly and shallowly grooved between the veins; margins often distinctly paler than the lamina, even on otherwise apparently mature leaves, glabrous or with minute, coarse hairs, <0.05 mm long. *Inflorescence* axillary, erect, arising from the axils of regular, mature leaves, either 1- or up to 6-flowered in the upper axils; axis 0.4–1.0 mm long when 1-flowered, to 4.0 mm long if multi-flowered,  $\pm$  terete, with a dense indumentum, bud-rudiment absent in 1-flowered inflorescences, present in multi-flowered inflorescences; flowers erect, sessile or pedicellate above the bracteoles, or in multi-flowered inflorescences pedicellate below the bracteoles, with pedicels above the bracteoles to 0.5 mm long, and those below to 0.7 mm long. *Fertile bracts* present only in multi-flowered inflorescences, ovate to broadly ovate, 0.5–1.0 mm long, 0.5–0.6 mm wide, sterile bracts absent. *Bracteoles* ovate to broadly ovate, 0.7–1.0 mm long, 0.5–0.7 mm wide, acute to obtuse; abaxial surface keeled, glabrous; margins ciliolate. *Sepals* ovate or narrowly ovate, 1.4–2.0 mm long, 0.6–0.8 mm wide, acute or subacute; abaxial surface pale green or straw-coloured, glabrous or sometimes with a few basal hairs, venation variable, obscure or with the midrib and 1 or 2 veins either side well defined; adaxial surface with a well-defined basal hair tuft and a few hairs towards the apex; margins ciliolate with hairs to 0.1 mm long. *Corolla tube* white, obovoid or narrowly obovoid, usually longer than, or very occasionally slightly shorter than, the sepals, 1.6–2.1 mm long, 1.2–1.4 mm wide, glabrous externally, internal surface with an apical band of reflexed hairs, otherwise glabrous. *Corolla lobes* white, longer than, or occasionally equal to, the tube, 2.0–3.1 mm long, 0.5–0.6 mm wide at base, erect in the basal 1/3–1/2 and then spreading and recurved, glabrous externally, internal surface with a dense indumentum of  $\pm$  terete, ornamented hairs. *Filaments* terete, 0.2–0.3 mm long, attached to the anther 1/2–2/3 above anther base, adnate to tube just below the sinuses. *Anthers* partially exerted from the tube (by 2/3–3/4 of their length), 0.7–1.0 mm long, apex shallowly emarginate. *Nectary* partite, the scales, 0.4–0.6 mm long, 0.2–0.3 mm wide, glabrous. *Ovary* very pale green, or pale brown, very narrowly ellipsoid to  $\pm$  cylindrical, slightly compressed, 0.8–1.0 mm long, 0.3–0.5 mm wide, glabrous, 2-locular. *Style* 1.3–2.1 mm long, minutely scabrous in the upper half, glabrous below, arising from a depression at the ovary apex, exerted from corolla tube to a point *c.* level with or a little beyond the anther apices; stigma distinctly expanded. *Fruit* elliptic, narrowly elliptic or narrowly obovate in outline, 5.0–7.0 mm long, 1.6–2.5 mm wide, much longer than the sepals, strongly compressed, with a hairy, sharply ridged gynophore; surface dry, with 3–5 raised, longitudinal veins; style early deciduous.

Two allopatric subspecies are recognised based on a combination of minor leaf, flower and fruiting differences.

*Notes.* There are two major, westerly outliers in the distribution of this species that do not fit comfortably within either of the subspecies recognised below. Although both were collected from Jarrah forest there is about 82 km between the two population sites: *A.R. Annels* 1449 from the Mt Roe National Park, north-west of Denmark and *R. Davis* 10212 from a site east of Manjimup. Both have leaves noticeably thinner and more flexible than is usual for the species, but more significantly the former has a glabrous fruiting gynophore. Unfortunately, *R. Davis* 10212 is a flowering-only collection and cannot be checked for this feature. The presence of hairs on the gynophore is otherwise a strong diagnostic character for both *S. flavescens* and *S. densifolia*. It will be necessary to examine further collections from the forest country before a decision is made regarding the status of these outliers. For the time being they are referred to *S. aff. flavescens*.

### ***Styphelia flavescens* subsp. *flavescens***

*Leucopogon flavescens* Sond. var. *flavescens* Benth., *Fl. Austral.* 4: 213 (1868) [autonym].

*Leaves* narrowly obovate to narrowly elliptic, 4–10 mm long, 1.2–3.0 mm wide, widest leaves per specimen 2.0–3.0 mm wide; *sepals* ovate or narrowly ovate, 1.4–1.7 mm long, acute or subacute; *corolla tube* longer than the sepals; *corolla lobes* longer than the tube, 2.5–3.1 mm long; *style* 1.5–2.1 mm long; *fruit* narrowly elliptic to narrowly obovate, to 2.0 mm wide. (Figure 1D)

*Other specimens examined.* WESTERN AUSTRALIA: [localities withheld for conservation reasons] 6 Oct. 1992, *A.R. Annels & G. Wardle-Johnson* ARA 2525 (PERTH); 7 Dec. 1986, *E.J. Croxford* 5142 (PERTH); 18 July 1987, *E.J. Croxford* 5657 (PERTH); 8 Mar. 1967, *A.S. George* 8651 (MEL *n.v.*, PERTH); 14 Feb. 2004, *M. Hislop* 3162 (CNS, NSW, PERTH); 14 Feb. 2004, *M. Hislop* 3164 (MEL, PERTH); 15 Feb. 2004, *M. Hislop* 3167 (CANB, CNS, PERTH); 28 Oct. 1985, *N. Hoyle* 1477 (NSW *n.v.*, PERTH); 5 Aug. 1986, *G.J. Keighery* 8325 (CANB *n.v.*, PERTH); 27 Nov. 1986, *G.J. Keighery* 8717 (PERTH); 29 Aug. 1986, *J.M. Powell* 2710 (NSW *n.v.*, PERTH); 29 Aug. 1986, *J.M. Powell* 2710 (HO *n.v.*, K *n.v.*, L *n.v.*, NSW *n.v.*, PERTH); 29 Aug. 1986, *J.M. Powell* 2710B (HO *n.v.*, NSW *n.v.*, PERTH); 29 Oct. 1959, *R.D. Royce* 6137 (PERTH); 21 May 1975, *G.T. Smith & L.A. Moore s.n.* (PERTH).

*Distribution and habitat.* The typical subspecies has a very restricted, near-coastal distribution from Nanarup, west of Two Peoples Bay, to the western edge of Waychinicup National Park, in the far south of the Jarrah Forest bioregion. Grows in the understorey of open woodland or heath, in deep sand, sand over laterite or sand over granite.

*Conservation status.* To be listed as Priority Two under Conservation Codes for Western Australian Flora (Tanya Llorens pers. comm.). Although much of the range of this taxon is situated within the conservation estate and it is often locally common, the fact that it is so restricted makes it particularly vulnerable to the ongoing effects of climate change and to the root-rot pathogen, *Phytophthora cinnamomi*.

*Notes.* One very unusual feature observed in subsp. *flavescens* but not seen by the author in any other species of western *Styphelia* is for the axes of some multi-flowered inflorescences to continue vegetative growth beyond the uppermost flower. The usual developmental path is for growth to stop at the terminal bud-rudiment.

### ***Styphelia flavescens* subsp. *stirlingensis* Hislop, *subsp. nov.***

*Type:* Stirling Range, Western Australia [precise locality withheld for conservation reasons], 6 January 2011, *M. Hislop* 4104 (*holo:* PERTH 08342725; *iso:* MEL, NSW).

*Leaves* very narrowly elliptic to very narrowly obovate, occasionally  $\pm$  linear, 5–16 mm long, 1.0–2.0 mm wide, widest leaves per specimen 1.3–2.0 mm wide; *sepals* narrowly ovate, 1.7–2.0 mm long, acute; *corolla tube* usually slightly longer or very occasionally slightly shorter than the sepals; *corolla lobes*

longer than or occasionally equal to the tube, 2.0–2.6 mm long; *style* 1.3–1.7 mm long; *fruit* elliptic or narrowly elliptic, to 2.5 mm wide. (Figure 1E)

*Diagnostic characters.* Within the *S. blepharolepis* group distinguished by the following character combination: branchlets densely hairy, with hairs to *c.* 0.1 mm long; leaves with non-pungent apices, very narrowly elliptic to very narrowly obovate, occasionally  $\pm$  linear, 5–16 mm long, 1.0–2.0 mm wide (widest leaves per specimen 1.3–2.0 mm wide); inflorescence usually 1-flowered, flowers sessile or pedicellate above the bracteoles, with a pedicel to 0.5 mm long; sepals acute, never long-attenuate, glabrous abaxially, 1.7–2.0 mm long, 0.6–0.8 mm wide; corolla tube usually longer or very occasionally slightly shorter than the sepals; corolla lobes longer than, or occasionally equal to, the tube, 2.0–3.1 mm long, 0.5–0.6 mm wide at base; nectary scales glabrous; fruiting gynophore hairy.

*Other specimens examined.* WESTERN AUSTRALIA: [localities withheld for conservation reasons] 23 Feb. 2006, *S. Barrett* 1450 (PERTH); 25 Oct. 1997, *E.A. Brown* 97/420, *P.G. Wilson & N. Lam* (NSW *n.v.*, NY *n.v.*, PERTH, UNSWDB22685); 30 Dec. 2001, *M. Hislop* 2527 (CNS, NSW, PERTH); 23 Oct. 1985, *N. Hoyle* 1186 (CANB *n.v.*, PERTH); 22 July 1982, *J.M. Powell* 1929 (CANB *n.v.*, K *n.v.*, NSW *n.v.*, PERTH); 31 Aug. 1986, *J.M. Powell* 2772 (HO *n.v.*, K *n.v.*, NSW *n.v.*, PERTH); 12 May 2011, *D. Rathbone* DAR 306 (PERTH); 24 Nov. 1982, *A. Strid* 21548 (PERTH); 23 Feb. 1989, *R.T. Wills* 1153 (PERTH).

*Distribution and habitat.* Has a scattered distribution within and in the immediate vicinity of the Stirling Range, in the far west of the Esperance Plains bioregion. Grows in rocky soils over quartzite or sandstone or in deep sands, in open woodland or heath.

*Phenology.* Peak flowering is in the late spring and summer months, although as with most species in the *S. blepharolepis* group sporadic flowering occurs at other times of the year. Similarly, more or less mature fruit is likely to be present over many months of the year.

*Etymology.* The epithet is derived from the place name Stirling Range + *-ensis* (native of).

*Conservation status.* To be listed as Priority Two under Conservation Codes for Western Australian Flora (Tanya Llorens pers. comm.). The known populations of the subspecies are all located within the Stirling Range National Park or in two nearby nature reserves and the plant is sometimes locally common. However, collecting notes associated with a specimen collected by Albany-based Flora Conservation officer, Sarah Barrett, indicate that it is very likely susceptible to *Phytophthora cinnamomi*. If so, significant future decline is probably inevitable given that the pathogen now affects much of the park (Barrett *et al.* 2008).

*Affinities.* Subsp. *stirlingensis* is narrowly distinct from the typical subspecies, differing mostly in the following quantitative ways: narrower leaves (widest leaves per specimen 1.3–2.0 mm wide *cf.* 2.0–3.0 mm in subsp. *flavescens*), longer sepals (1.7–2.0 mm *cf.* 1.4–1.7 mm), shorter corolla lobes (2.0–2.6 mm *cf.* 2.5–3.1 mm), often shorter style (1.3–1.7 mm *cf.* 1.5–2.1 mm) and a wider mature fruit (to 2.5 mm *cf.* 2.0 mm).

This taxon is sometimes mistaken for *S. corynocarpa* (Sond.) F.Muell. which has narrow, very similarly shaped leaves and co-occurs in the Stirling Range. Flowering specimens of *S. flavescens* subsp. *stirlingensis* can be distinguished from those of *S. corynocarpa* by almost always having single-flowered inflorescences (*cf.* multi-flowered in *S. corynocarpa*) and in having, with rare exceptions, sepals shorter than the corolla tubes (*cf.* always longer). Of course, if fruiting the two are readily separated, with *S. flavescens* subsp. *stirlingensis* having the ribbed and flattened fruit typical of the *S. blepharolepis* group, while in *S. corynocarpa* they are obovoid.

***Styphelia semitrullata*** Hislop & E.A.Br., *sp. nov.*

*Type*: south of Hyden, Western Australia [precise locality withheld for conservation reasons], 21 November 2016, *M. Hislop* 4683 (*holo*: PERTH 09047565; *iso*: CANB, CNS, HO, K, MEL, NSW).

*Leucopogon compressicarpus* E.A.Br. ms., Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [before December 2011].

*Leucopogon* sp. Lake Magenta (K.R. Newbey 3387) *p.p.*, Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [1 Aug. 2025].

Erect *shrubs* to *c.* 1.8 m high and 1.5 m wide (but usually less than 1.2 m high and wide), single-stemmed at ground level with a fire-sensitive rootstock. Young *branchlets* glabrous, or with a very sparse indumentum of very short hairs, <0.05 mm long. *Leaves* helically arranged, variably antrorse, mostly steeply so; apex acute or sometimes subacute, with a blunt callus tip; base cuneate to attenuate; petiole usually well-defined, 0.5–1.4 mm long, adaxial surface hairy, abaxial surface and margins glabrous; lamina rather variable in shape, ovate, broadly ovate, often  $\pm$  trullate, elliptic, broadly elliptic, or occasionally obovate, 4.0–8.0 mm long, 2.5–4.5 mm wide,  $\pm$  concolorous, usually adaxially concave, often strongly so, occasionally  $\pm$  flat, longitudinal axis usually gently incurved, occasionally  $\pm$  straight; adaxial surface matt, faintly striate, glabrous or with a few basal hairs; abaxial surface matt, glabrous, with 5–9 primary veins, narrowly but openly grooved between the veins; margins with minute, coarse hairs, <0.05 mm long or glabrous. *Inflorescence* axillary, erect, arising from the axils of regular, mature leaves, early seasonal leaves or sometimes from bare nodes below the leaves, usually 1- but sometimes up to 5-flowered in the upper axils; axis 0.1–1.0 mm long when 1-flowered, to 3.3 mm long if multi-flowered,  $\pm$  terete, with a dense indumentum, bud-rudiment absent in 1-flowered inflorescences, present in multi-flowered inflorescences; flowers erect, sessile. *Fertile bracts* present only in multi-flowered inflorescences, ovate to broadly ovate, 0.8–1.0 mm long, 0.7–0.8 mm wide, sterile bracts absent. *Bracteoles* ovate to broadly ovate, 0.8–1.3 mm long, 0.7–1.0 mm wide, obtuse or acute; abaxial surface not or obscurely keeled, glabrous or with a few hairs about the keel; margins ciliate. *Sepals* ovate, 1.4–1.9 mm long, 0.9–1.0 mm wide, acute or subacute; abaxial surface pale green, glabrous, venation rather obscure or with the midrib and 1 or 2 veins on either side well defined; adaxial surface with a well-defined basal tuft and a few hairs towards the apex; margins ciliate with hairs to *c.* 0.2 mm long. *Corolla tube* white, narrowly ellipsoid, longer than the sepals, 2.2–2.5 mm long, 1.4–1.8 mm wide, glabrous externally, internal surface with an apical band of reflexed hairs, otherwise glabrous. *Corolla lobes* white, shorter than the tube, 1.7–2.3 mm long, 0.7–0.8 mm wide at base, erect in the basal half and then spreading and recurved, glabrous externally, internal surface with a dense indumentum of  $\pm$  terete, ornamented hairs. *Filaments* terete, 0.2–0.3 mm long, attached to anther *c.* 3/4 above anther base, adnate to tube just below the sinuses. *Anthers* partially exerted from the tube (by 1/4–1/3 of their length), 0.8–1.4 mm long, apex shallowly emarginate. *Nectary* partite, the scales 0.4–0.6 mm long, 0.3–0.4 mm wide, glabrous. *Ovary* very pale green, very narrowly ovoid, slightly compressed, 0.8–1.2 mm, *c.* 0.5 mm wide, glabrous, 2-locular. *Style* (1.3)1.6–2.5 mm long, minutely scabrous in the upper half, glabrous below, arising from a depression at the ovary apex, exerted from corolla tube to a point *c.* level with or a little beyond the anther apices; stigma distinctly expanded. *Fruit* narrowly obovate to narrowly elliptic in outline, 4.0–6.2 mm long, 1.8–2.7 mm wide, much longer than the sepals, strongly compressed, with a glabrous, sharply ridged gynophore; surface dry, with 5–7 raised longitudinal veins; style early deciduous. (Figure 1F)

*Diagnostic characters.* Within the *S. blepharolepis* group distinguished by the following character combination: branchlets glabrous, or with a very sparse indumentum of very short hairs, <0.05 mm long; leaves with non-pungent apices, ovate, broadly ovate, often  $\pm$  trullate, elliptic, broadly elliptic or occasionally obovate, 4.0–8.0 mm long, 2.5–4.5 mm wide (widest leaves per specimen, 3.0–4.5 mm); inflorescences usually 1-flowered, sometimes up to 5-flowered in the upper axils, flowers sessile above the bracteoles; sepals acute or subacute, never long-attenuate and filiform, glabrous abaxially, 1.4–1.9 mm long, 0.9–1.0 mm wide; corolla tube 2.2–2.5 mm long, longer than the sepals, longer than the corolla

lobes; corolla lobes 0.7–0.8 mm wide at base; anthers 0.8–1.4 mm long; nectary scales glabrous; fruiting gynophore glabrous.

*Other specimens examined.* WESTERN AUSTRALIA: [localities withheld for conservation reasons] 4 Nov. 1965, *A.S. George* 7308 (MEL, NSW, PERTH); 5 Nov. 1965, *A.S. George* 7330 (MEL, NSW, PERTH); 11 Nov. 2001, *M. Hislop* 2449 (NSW, PERTH); 21 Nov. 2016, *M. Hislop* 4685 (PERTH); 29 Mar. 2017, *M. Hislop* 4702 (MEL, PERTH); 24 Aug. 2017, *M. Hislop* 4717 (PERTH); 7 July 1971, *K.R. Newbey* 3387 (PERTH).

*Distribution and habitat.* Distributed from south of Hyden southwards to the Lake Magenta–Dunn Rock area, in the Mallee bioregion. *Styphelia semitrullata* is a plant of lateritic uplands, growing on yellow, loamy sand over gravel in heath or open mallee woodland.

*Phenology.* Most flowering specimens have been collected in November, although *K.R. Newbey* 3387 has flowers present in July. Several of the flowering specimens also have some fruit present at various stages of development suggesting that plants may flower sporadically through the cooler months.

*Etymology.* From the Latin *semi-* (half-) and *trullatus* (trullate, angular-ovate), in reference to the common leaf shape.

*Conservation status.* To be listed as Priority Two under Conservation Codes for Western Australian Flora (Tanya Llorens pers. comm.). While this species is known to occur in one nature reserve, the populations that have been identified there are very sparse. Rather vague locality statements on older collections suggest the possibility that it may also occur in one or two large reserves in the south of its range, but this is yet to be confirmed. The current indications are that this is likely to be a rare plant.

*Affinities.* Morphologically, *S. semitrullata* is most similar to *S. cranfeldii*, with which it was included within a broad concept of *L. sp.* Lake Magenta (refer to the affinities heading under that species for distinguishing features). Otherwise within the *S. blepharolepis* group only *S. blepharolepis* itself has similarly broad leaves and might be confused with *S. semitrullata*. However, that species is readily distinguished by its long-mucronate, pungent leaf tips, ciliate nectary scales and consistently multiflowered inflorescences.

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