

**Description of the rare Goldfields Laceflower,
Thryptomene planiflora (Myrtaceae: Chamelaucieae)**

Barbara L. Rye

Western Australian Herbarium, Biodiversity and Conservation Science,
Department of Biodiversity, Conservation and Attractions,
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
Email: Barbara.Rye@dbca.wa.gov.au

SHORT COMMUNICATION

The Victorian species *Thryptomene calycina* (Lindl.) Stapf. is a very valuable Australian wildflower in the cut-flower industry. It produces masses of tiny, rather flat-topped flowers that superficially resemble lacework flowers, and hence is known as Victorian Laceflower. Most south-western Australian species of *Thryptomene* Endl. have comparatively cupped flowers, but members of the small, endemic sect. *Thryptocalpe* Stapf. have flowers that are very similar in appearance to those of *T. calycina*. A new member of this section is described below.

***Thryptomene planiflora* Rye, sp. nov.**

Type: Coolgardie–Esperance highway, Western Australia [precise locality withheld for conservation reasons], 30 September 2017, J.A. Wege & K.A. Shepherd JAW 2037 (*holo*: PERTH 09018859; *iso*: CANB, K, MEL).

Thryptomene glauca J.W.Green ms, Western Australian Herbarium, in *FloraBase*, <https://florabase.dpaw.wa.gov.au/> [accessed 22 August 2017].

Thryptomene sp. Londonderry (R.H. Kuchel 1763), Western Australian Herbarium, in *FloraBase*, <https://florabase.dpaw.wa.gov.au/> [accessed 22 August 2017].

Shrubs 0.5–2 m high, 0.4–1 m wide, single-stemmed but often multi-branched at base, glabrous; flowering branchlets mostly with peduncles borne in 3–13 axils extending up to 20 mm along the stem. *Leaves* antrorse to patent, mostly widely antrorse. *Petioles* 0.3–0.5 mm long. *Leaf blades* often recurved, broadly or very broadly obovate, 1.3–2.3 mm long, 1.4–1.8 mm wide, up to 0.6 mm thick, occasionally glaucous, ± truncate, with apical point absent or up to 0.1 mm long, entire; abaxial surface keeled, each side of midvein with 2 or 3 main longitudinal rows of 2–4 prominent glands; adaxial surface flat or concave. *Peduncles* 1 per axil, 0.7–2 mm long, 1-flowered. *Bracteoles* pinkish, often persistent in flower or usually deciduous, ovate to almost obovate but folded along middle with the sides incurved, 0.7–1.3 mm long, thin-textured, often the same colour as the hypanthium, entire. *Pedicels* ± absent. *Flower buds* obtuse, usually with visible sepals (i.e. outer surface of outer sepals) deep pink and hypanthium pink- to purple-tinged. *Flowers* with widely spreading sepals and petals

together forming an almost circular margin, 3–4.3 mm diam. *Hypanthium* broadest distally in bud and sometimes in young flower but soon becoming urceolate, 1.8–2.3 mm long, light green or pink to purple-tinged at first, becoming pink to purple at least on upper side, smooth or irregularly rugose. *Sepals* 5, petaloid in texture, colour and shape but with a broader base, 0.8–1.3 mm long, 1–1.5 mm wide, entire, becoming a deeper pink colour and still widely spreading in mature fruit. *Petals* 5, almost circular, 1–1.4 mm long, often pink on lower surface but upper surface usually white or pale pink at first but turning deeper pink or partially pink in young fruits, entire, often persistent in young fruit but usually shed before fruit is fully mature. *Stamens* 5, antisepalous. *Filaments* 0.25–0.3 mm long. *Anthers* 0.25–0.3 mm long, 0.3–0.4 mm wide, with distally divergent cells, each dehiscent by a slit about as long as the cell; connective gland terminal, its apex directed towards centre of flower. *Ovary* 1-locular; ovules 2, collateral. *Style* c. 0.3 mm long. *Fertile fruits* indehiscent, hard, ± globular within a broadly urceolate hypanthium, c. 1.5 mm long, c. 1.3 mm diam., ± truncate, 1-seeded; hypanthium slightly rugose at first, becoming smooth, deep pink to purple, usually with a whitish bloom; seed broadly reniform with distal part broadest, c. 1 mm long, c. 0.7 mm wide. (Figures 1, 2)

Diagnostic features. Distinguished from other members of *T.* sect. *Thryptocalype* by its broadly or very broadly obovate leaves with no obvious apical point, and by the tendency for its hypanthium to become glaucous.

Selected specimens examined. WESTERNAUSTRALIA: [localities withheld for conservation reasons] 23 July 1953, *H.F. & M. Broadbent* 1074 (BM); Aug. 1947, *N.T. Burbidge* 2742 (PERTH); 15 June 1978, *J.W. Green* 4710 (CANB *n.v.*, K *n.v.*, PERTH); 8 Sep. 2016, *J. Jackson* 6-2 (PERTH); 14 Sep. 1964, *R.H. Kuchel* 1763 (AD *n.v.*, PERTH); 30 Sep. 1968, *A.E. Orchard* 1255 (PERTH); 6 Nov. 2004, *B.L. Rye & M.E. Trudgen* BLR 241196 (CANB, MEL, NSW, PERTH); 14 Sep. 1964, *Paul G. Wilson* 3154 (PERTH); 13 Aug. 2003, *Peter G. Wilson* 1670 & *G.M. Towler* (CANB *n.v.*, NSW *n.v.*, PERTH); 10 June 2013, *V. Yeomans* VY 840-06 (PERTH).

Distribution and habitat. Restricted to a small area south of Coolgardie in the Goldfields region, extending from near Spargoville (north of Kambalda) south-west to the Queen Victoria Rocks area. *Thryptomene planiflora* is recorded on plains, with yellow or brown to red sandy soils, in shrublands that are often dominated by *Acacia*.

Phenology. Flowers mainly from June to October. Fruits recorded in November.

Conservation status. Listed by Smith and Jones (2018) as Priority One under Conservation Codes for Western Australian Flora, under the name *T.* sp. Londonderry (R.H. Kuchel 1763). *Thryptomene planiflora* is somewhat geographically restricted, with only one population occurring in a small nature reserve.

Etymology. From the Latin *planus* (level, flat) and *-florus* (-flowered), as the flowers (when fully open) have a relatively level surface formed by the widely spreading petals and sepals (Figures 1D, 2).

Vernacular name. Goldfields Laceflower.

Co-occurring species. This species has not been recorded growing with any other members of the genus although it overlaps in range with two other species from *T.* sect. *Thryptocalype* and also with several species from other sections.

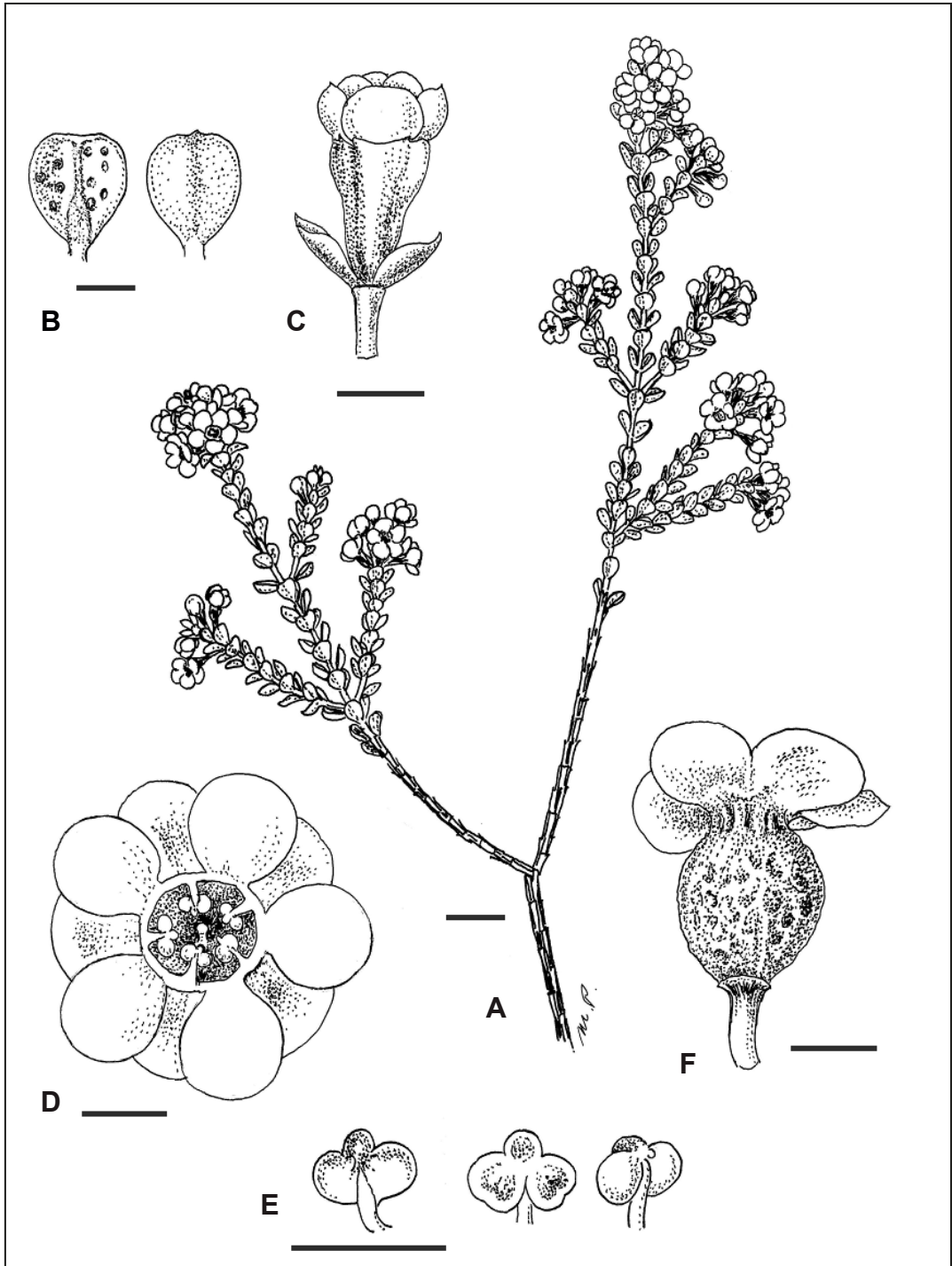


Figure 1. *Thryptomene planiflora*. A – flowering branch; B – abaxial (L) and adaxial (R) surfaces of leaf; C – peduncle, bracteoles and flower bud; D – top view of flower; E – three views of stamen; F – diaspore (with persistent sepals but lacking petals) and peduncle. Scale bars = 1 mm (A–D, F), 10 mm (E). Drawn by Margaret Pieroni from *K.R. Newbey* 5355 (A–E) and *J.S. Beard* 2409 (F).



Figure 2. *Thryptomene planiflora* in flower and fruit. Photograph © Rob Davis from *J.A. Wege & K.A. Shepherd JAW 2037*.

Affinities. *Thryptomene planiflora* can be distinguished from other members of sect. *Thryptocalpe* as indicated in the key below.

1. Leaves broadly or very broadly obovate, broader than thick, not or scarcely pointed.
Hypanthium tending to develop a whitish bloom (Queen Victoria Rocks–Kambalda area) **T. planiflora**
- 1: Leaves linear in outline to broadly obloid-ellipsoid, about as thick as wide or thicker than wide, usually mucronulate to prominently pointed but sometimes \pm absent in *T. urceolaris*. Hypanthium lacking a bloom
 2. Leaves linear to narrowly oblong in outline, 4–9.5 mm long; apical point 0.7–1.4 mm long. Hypanthium distinctly 10-ribbed in young fruit, becoming smooth at maturity (Mullewa–Beacon–Merredin–Kondinin) **T. cuspidata**
 - 2: Leaves clavate or obovate to narrowly oblong in outline, 1.4–3.5(–4) mm long; apical point absent or up to 0.8(–1) mm long. Hypanthium not or scarcely ribbed in young fruit
 3. Mature leaves distinctly angled between the two surfaces, 2–4 mm long; apical point recurved, 0.3–1 mm long. Peduncles 0.5–1.5 mm long. Flowers 2.5–4 mm diam. (Cadoux–Coolgardie–Frank Hann NP) **T. kochii**
 - 3: Mature leaves clavate (rounded not angled), 1.4–2.5 mm long; apical point absent or erect, up to 0.2 mm long. Peduncles 0.3–0.5 mm long. Flowers 4–5.5 mm diam. (Diemals Stn–Yindi Stn) **T. urceolaris**

Notes. *Thryptomene* sect. *Thryptocalpe* occurs in inland parts of south-western Australia, and its members are large, long-lived shrubs. Sepals and petals are similar in size and texture in this plant group (see Figure 1D), together forming a broad, flat, white or pink ring surrounding the circular ovary summit. This flat border is fully or partially retained in fruit and presumably enhances dispersal of the diaspore when it is released from the plant. Members of the section are also characterised by the dehiscence of their anthers via two long slits, and by their urceolate fruiting hypanthium (see Figure 1F).

Since these species resemble the prized Victorian Laceflower, which belongs to sect. *Paryphantha* (Schauer) Stapf., they have potential for use in the nursery and cut-flower industries. *Thryptomene planiflora* often has deeper pink flowers and fruits than the other members of sect. *Thryptocalpe*, which would make it possibly the most desirable of the western laceflower species for commercial use.

Acknowledgements

I am grateful to the Australian Biological Resources Study for funding fieldwork, Margaret Pieroni for the illustration, Juliet Wege and Kelly Shepherd for collecting new material and general advice, and Rob Davis for taking the image. This research was supported by a Science Project Support Grant from Biodiversity and Conservation Science (DBCA).

References

Smith, M.G. & Jones, A. (2018). *Threatened and Priority Flora list 5 December 2018*. Department of Biodiversity, Conservation and Attractions. <https://www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities/threatened-plants> [accessed 19 September 2019].

