

Studies in Euphorbiaceae s.lat. 6. A revision of the genus *Poranthera* Rudge (*Antidesmeae*, *Porantherinae*) in Australia

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Summary

Halford, D.A. & Henderson, R.J.F. (2005). Studies in Euphorbiaceae s.lat. 6. A revision of the genus *Poranthera* Rudge (*Antidesmeae*, *Porantherinae*) in Australia. *Austrobaileya* 7(1): 1–27. The genus *Poranthera* Rudge is revised for Australia. *Oreoporanthera* Hutch. is accepted as a taxonomic synonym of *Poranthera*. Fourteen species of *Poranthera* are recognised in Australia and a key is provided for their identification. The following are described here as new: *P. dissecta* Halford & R.J.F.Hend., *P. florosa* Halford & R.J.F.Hend., *P. leiosperma* Halford & R.J.F.Hend., *P. obovata* Halford & R.J.F.Hend. and *P. oreophila* Halford & R.J.F.Hend. The new combination *P. petalifera* (Orchard & J.B.Davies) Halford & R.J.F.Hend., based on *Oreoporanthera petalifera* Orchard & J.B.Davies, is made. New species are illustrated, all species are described and distribution maps provided, and notes on their distribution, habitat and phenology are given. Lectotypes are chosen for *P. microphylla* var. *intermedia* Müll.Arg. and *P. arbuscula* Sond. *Poranthera coerulea* Schwarz is neotypified.

Key Words: Euphorbiaceae, *Poranthera*, *Oreoporanthera*, Australian flora, taxonomy, nomenclature

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Introduction

Poranthera Rudge, as accepted here, is a genus of fifteen species that are annuals or herbaceous perennials. The genus has representatives in all Australian states as well as in New Zealand, with thirteen of the species endemic in Australia and one endemic in New Zealand. Centres of diversity are found in south-eastern Australia and south-western Western Australia. The species endemic in New Zealand is *P. alpina* Cheeseman ex Hook.f. which is not dealt with here. A description of this species is given in Cheeseman (1925).

Webster (1994) included *Poranthera* Rudge, as well as *Oreoporanthera* Hutch., in Euphorbiaceae subfamily *Phyllanthoideae* Ascherson, tribe *Antidesmeae* (Sweet) Hurusawa, subtribe *Porantherinae* (Müll.Arg.) Köhler.

The genus *Poranthera* was established by Rudge in 1811 to include a single species, *P. ericifolia* Rudge, based on material collected from Port Jackson, New South Wales (Rudge, 1811). The generic name is derived from Greek *poros*, pore, and *anthera*, anther, in reference to the species' anther cells dehiscing by terminal pores. In his protologue of the genus and

species, Rudge mistakenly described its flowers as lacking a calyx. He was apparently deceived by the petaloid nature of their calyx lobes and was not aware of the presence of small, inconspicuous petals within the calyx whorl.

Over the subsequent 55 years, another nine species of *Poranthera* were described by various authors. Brongniart (1833) described *P. microphylla* and *P. corymbosa*, Klotzsch (1848) described *P. drummondii*, *P. ericoides*, *P. glauca*, *P. huegelii* and *P. piceoides* and Sonder (1857) described *P. arbuscula* while Baillon (1858) described *P. linearoides*, the name of which is an illegitimate synonym of *P. corymbosa*.

Later, Baillon (1866) and Müller (1866) independently accepted *Poranthera* as containing only six species and both placed *P. drummondii*, *P. piceoides* and *P. arbuscula* in synonymy under *P. microphylla*, *P. ericoides* and *P. corymbosa* respectively. Müller (*loc. cit.*), however, also recognised seven varieties; *P. corymbosa* var. *arbuscula* (Sond.) Müll.Arg., *P. corymbosa* var. *genuina* Müll.Arg. (= *P. corymbosa* Brongn. var. *corymbosa*), *P. microphylla* var. *diffusa* Müll.Arg., *P. microphylla* var. *drummondii* (Klotzsch)

Müll.Arg., *P. microphylla* var. *genuina* Müll.Arg. (= *P. microphylla* Brongn. var. *microphylla*), *P. microphylla* var. *glauca* Müll.Arg. and *P. microphylla* var. *intermedia* Müll.Arg. Seven years later, Bentham (1873), in his account of *Poranthera* in *Flora Australiensis*, accepted only five species in the genus, combining *P. glauca* with *P. ericoides*.

In the most recent comprehensive work on *Poranthera*, Grüning (1913) recognised the five species Bentham enumerated, re-instated *P. drummondii* as a species distinct from *P. microphylla*, distinguished a number of varieties in *P. microphylla* and *P. corymbosa* and included *P. alpina*, a species described by Hooker (1881) from New Zealand. Grüning was the first to formally divide *Poranthera* into subgeneric groups describing *Poranthera* subgen. *Euporanthera* Grüning (= *Poranthera* subgen. *Poranthera*), characterised by having flowers of both sexes possessing petals and in terminal racemose or corymbose inflorescences, and with stipules thin and membraneous, and *Poranthera* subgen. *Oreoporanthera* Grüning, distinguished by its flowers lacking petals, being solitary and axillary, and with stipules more or less leathery. Since Grüning's treatment, two other species have been described, namely *P. triandra* (Black 1916) and *P. coerulea* (Schwarz 1927).

The genus *Oreoporanthera* was erected by Hutchinson in 1969 to accommodate the species from subalpine communities on the South Island of New Zealand previously known as *Poranthera alpina* Cheeseman ex Hook.f. (Hutchinson 1969). He distinguished *Oreoporanthera* from *Poranthera* by its dioecious habit, arrangement of flowers singly in upper leaf axils, opposite leaves with strongly recurved margins, and by its flowers which lacked petals in both sexes and a vestigial ovary in male flowers. Orchard & Davies (1985) added a second species, *O. petalifera*, to this genus. In their discussion, they noted that their newly described species, although closely related to *O. alpina*, disagreed with Hutchinson's description of the genus in having petals in male and female flowers and a vestigial ovary in male flowers. The new species described in this paper as *P. oreophila*, is similar to *O. alpina* and *O. petalifera* in its dioecy and strictly opposite

leaves with strongly recurved margins. However, its flowers are borne in short dense terminal racemes. There is also a high-altitude form of *P. microphylla* occurring in the Australian Alps which resembles *P. oreophila* in having opposite leaves with more or less strongly revolute margins, but it differs from both those in its monoecy. It is our opinion that the distinctions used to separate *Oreoporanthera* from *Poranthera* are extremely tenuous. We therefore concur with Webb *et al.* (1988) that the separation of *Oreoporanthera* from *Poranthera* cannot be upheld and that the species concerned are best placed in a single genus named *Poranthera*.

No formal subgeneric classification is followed in this revision though two informal groups can be recognised based on habit. These are either small annuals or small herbaceous perennials with annual stems dying back to a more or less woody rootstock (*P. microphylla*, *P. dissecta*, *P. drummondii*, *P. triandra*, *P. coerulea*, *P. leiosperma*, *P. petalifera*, *P. florosa* and *P. oreophila*) or comparatively large annuals or perennials with $\pm$ woody stems (*P. ericifolia*, *P. huegelii*, *P. corymbosa*, *P. obovata* and *P. ericoides*).

Materials and methods

The present study involved examination of herbarium specimens by both authors, together with field investigations by the second author from 1988 to 1992. Altogether, approximately 1100 specimens have been examined and annotated. These comprise collections from the following herbaria: AD, BRI, CANB, DNA, HO, K, LD, MEL, NE, NSW, P and PERTH. The above acronyms and ones used in the text are those given by Holmgren *et al.* (1990). Author abbreviations follow Brummitt & Powell (1992). All specimens cited have been examined unless indicated as unseen *n.v.* (*non visus*).

The species treated in the present paper are listed alphabetically. Descriptions of taxa were made from dried herbarium specimens, material preserved in 70% ethanol or dried material reconstituted by placing in boiling water for a few minutes. Measurements listed are based upon the total variation observed in the herbarium specimens examined. Colour of fresh

vegetative and floral parts, where given, are either from herbarium label notes or from photographs taken by the second author during field studies. Plant size, habit, flowering and fruiting times, and habitat data were obtained from herbarium labels. The morphological data for this revision were recorded using the DELTA system (Dallwitz *et al.* 1993). The distribution maps were produced with MapInfo Version 3 and are based on herbarium specimen locality data.

Taxonomy

Poranthera Rudge, *Trans. Linn. Soc. London* 10: 301-303 (1811); *Poranthera* Rudge subgen. *Poranthera*, Gruning in A. Engler, *Pflanzenr.* H.58: 16 (1913); *Poranthera* subgen. *Euporanthera* Gruning in A. Engler, *Pflanzenr.* Heft 58: 16 (1913), *nom. inval.* **Type:** *P. ericifolia* Rudge.

Poranthera subgen. *Oreoporanthera* Gruning in A. Engler, *Pflanzenr.* Heft 58: 21 (1913). **Type:** *Poranthera alpina* Cheeseman ex Hook.f.

Oreoporanthera Hutch., *Amer. J. Bot.* 56(7): 747 (1969). **Type:** *O. alpina* (Cheeseman ex Hook.f.) Hutch., *P. alpina* Cheeseman ex Hook.f.

Annuals or herbaceous perennials, monoecious or rarely dioecious, glabrous. Stems terete, erect, ascending, procumbent, decumbent or prostrate, leafy. Leaves stipulate, sessile or

petiolate, alternate or opposite, entire. Stipules persistent, conspicuous, white, membranous, entire or deeply lobed. Flowers pedicellate, solitary in upper leaf axils or in short dense terminal racemes that are sometimes umbel-like; racemes usually with several male and female flowers, solitary or several in a leafy terminal corymbose inflorescence, bracteate; bracts leaf-like. Perianth 2-whorled or sometimes lacking a corolla in female flowers; calyx with a short tube, 3- or 5(rarely 4)-lobed; lobes imbricate, petaloid, entire, persistent; petals 3 or 5(rarely 4), free, always shorter than calyx lobes, persistent. Glands 4 or 5, antipetalous. Male flowers with slender pedicels; stamens 3 or 5, antisepalous; filaments free; anthers 4-celled, dehiscing by terminal pores; rudimentary ovary present. Female flowers with mostly stout pedicels; ovary 3-locular, smooth, glabrous; locules biovulate; styles 3, free or shortly fused at base, each spreading, persistent, deeply 2-partite into linear branches or notched distally. Fruit capsular, depressed globose, 3- or 6-lobed, smooth or slightly rugose, glabrous, dehiscing septicidally into three 2-valved cocci leaving a persistent columella. Seeds wedge-shaped or reniform, white or light brown, smooth or variously sculptured, ecarunculate; endosperm copious.

A genus of fifteen species in tropical and temperate Australia and New Zealand. Fourteen species occur in Australia of which thirteen are endemic.

Key to Australian species of *Poranthera*

1. Leaves opposite 2
Leaves alternate 7
2. Plants dioecious, perennial with annual stems dying back to rootstock 3
Plants monoecious, annual or rarely with perennial rootstock 4
3. Flowers in short dense terminal racemes (N.S.W., Vic.) 12. *P. oreophila*
Flowers solitary in upper leaf axils (Tas.) 13. *P. petalifera*
4. Seeds smooth (W.A., S.A., Vic., N.S.W.) 9. *P. leiosperma*
Seeds tuberculate, granulate or striate 5
5. Calyces mostly 3-lobed, or if 4- or 5-lobed then with 1 or 2 lobes much smaller than other 3; seeds granulate (W.A., N.T., S.A.) 14. *P. triandra*
Calyces 5-lobed, rarely 4-lobed; lobes all $\pm$ equal in dimensions; seeds tuberculate or striate 6

6. Seeds granulate with translucent granules; stipules deeply dissected (W.A.) . . . **3. *P. dissecta***
 Seeds tuberculate with white tubercules; stipules entire or slightly toothed distally (all States) **10. *P. microphylla***
7. Herbaceous perennials or erect woody annuals to 80(rarely to 150) cm high **8**
 Small annuals to 30 cm high **12**
8. Seeds fenestrelate (W.A., S.A.) **8. *P. huegelii***
 Seeds reticulate ridged, reticulate-foveate, granulate, verrucate or smooth **9**
9. Leaf laminae ≥ 2 cm long (Qld, N.S.W., Vic.) **2. *P. corymbosa***
 Leaf laminae < 2 cm long **10**
10. Stipules laciniate (N.S.W.) **5. *P. ericifolia***
 Stipules entire **11**
11. Leaf laminae narrow-obovate, 10–15 mm long, 1.5–3 mm wide (Qld, N.S.W.) . . . **11. *P. obovata***
 Leaf laminae linear, 4–10 mm long, 0.5–1.4 mm wide (W.A.) **6. *P. ericoides***
12. Seeds smooth or alveolate **13**
 Seeds tuberculate, granulate or striate **16**
13. Seeds smooth (W.A., S.A., Vic., N.S.W.) **9. *P. leiosperma***
 Seeds alveolate **14**
14. Flowers in terminal racemes; calyx lobes of male flowers ≤ 1 mm long (W.A., N.T.) **1. *P. coerulea***
 Flowers in umbel-like racemes arranged in loose corymbose panicles; calyx lobes of male flowers 1.1–1.5 mm long **15**
15. Leaf laminae narrow-oblongate, cuneate at base (W.A.) **4. *P. drummondii***
 Leaf laminae spatulate, attenuate at base (W.A.) **7. *P. florosa***
16. Stipules deeply lobed (W.A.) **3. *P. dissecta***
 Stipules entire **17**
17. Calyces 3-lobed, rarely 4- or 5-lobed; leaves 2–5.5 mm long; seeds granulate (W.A., N.T., S.A.) **14. *P. triandra***
 Calyces 5-lobed; leaves 6–11 mm long; seeds tuberculate (all States) **10. *P. microphylla***

1. *Poranthera coerulea* O.Schwarz, *Repert. Spec. Nov. Regni Veg.* 24: 87 (1927).
Type: Northern Territory. 8 miles (c. 13 km) E of Port Darwin, N.T., *s.d.*, [F.A.K.] *Bleeser* 237; holo: B (destroyed); Thorak's Reserve, c. 10 miles (c. 16 km) SE [of] Darwin, 21 March 1961, *G. Chippendale* 7856 (neo [here chosen]: DNA; isoneo: BRI, NSW).

Illustration: Dunlop *et al.* (1995: 235, fig. 77), as *Poranthera microphylla*.

Monoecious, diffuse to compact annuals to 8 cm high. Stems unbranched or much branched distally; branchlets erect, smooth, glabrous, 1–1.5 mm across, with leaf scars obscure. Leaves subsessile, alternate, widely spaced along branchlets; stipules white, narrow-triangular, 1.5–2 mm long, entire or erose; laminae narrow-obovate to obovate, 13–27 mm long, 3–8 mm wide, flat, smooth and glabrous adaxially and abaxially, discolorous; midrib impressed proximally adaxially, prominent abaxially; base attenuate; apex obtuse to acute. Flowers in short

dense terminal racemes; racemes solitary or rarely several in a leafy terminal corymb; peduncles up to 6 mm long; rachis up to 20 mm long; bracts narrow-obovate, 2–5 mm long, 0.7–1 mm wide, acute. Male flowers with pedicels 0.8–1.3 mm long; calyx lobes 5, white or pink, obovate, 0.6–0.9 mm long, 0.4–0.5 mm wide, concavo-convex, rounded at apex; petals 5, white, erect, incurved distally, oblanceolate, 0.3–0.4 mm long, up to 0.1 mm wide, obtuse, with margins entire; glands ovate, up to 0.1 mm wide; stamens 5; filaments 0.7–0.8 mm long, slightly incurved; anthers *c.* 0.1 mm long; rudimentary ovary 3-lobed; lobes clavate, *c.* 0.4 mm long. Female flowers with pedicels 0.6–1 mm long, extending to *c.* 5 mm long in fruit; calyx lobes 5, white or pale pink, oblong, 1.1–1.3 mm long, 0.5–0.6 mm wide, $\pm$ flat, obtuse at apex; petals 5, white, linear-oblong, *c.* 0.3 mm long, *c.* 0.1 mm wide, obtuse, with margins entire; ovary depressed globose, 1.5–1.9 mm across, deeply 6-lobed, emarginate distally, $\pm$ smooth; styles each 0.5–0.7 mm long, deeply 2-partite, slender. Capsules depressed globose, 1.9–2.1 mm across, 0.9–1.1 mm long, shallowly 3 lobed, emarginate and slightly rugose distally. Seeds reniform, 0.6–0.7 mm long, 0.4–0.5 mm wide, 0.5–0.6 mm across; testa alveolate, brown.

Additional specimens examined: **Western Australia.** Mt Elizabeth track to Munja, Jul 1996, *Kenneally 11815* (PERTH). **Northern Territory.** *c.* 40 km NW of Jabiru, Mar 1981, *Craven 7691 & Whitbread* (CANB, MEL); Kapalga, Kakadu NP, Mar 1994, *Egan 3306* (BRI); Port Darwin, *s.d.*, *Holtze 537* (MEL); Melville Island, Apr 1986, *Johnson 4103* (BRI); Yirrkala, Sep 1948, *Specht 1020* (BRI); 4 km ESE of Jabiru, E of Ranger Plant, Apr 1980, *Telford 7535 & Wrigley* (CANB).

Distribution and habitat: *Poranthera coerulea* has a disjunct distribution. It occurs from the Darwin area east to Yirrkala, Northern Territory, with one isolated population in the Kimberley region, Western Australia. It is recorded as growing in open forest or woodland communities sometimes with a grassy understorey. The soils are sandy with ironstone gravel or lateritic red earths, in damp areas on plains or along damp creek beds. **Map 1.**

Phenology: Flowers and fruits have been collected in March, April, July and September.

Affinities: *Poranthera coerulea* is easily distinguished from *P. microphylla*, with which

it has been confused, by having a generally more robust habit, an alveolate seed coat and generally longer and broader leaves.

Typification: No type material of the name *Poranthera coerulea* has been located by us. Schwarz (1927) published the name *P. coerulea* based on a specimen at B collected in the Darwin area by F.A.K. Blesser labelled “Port Darwin, 8 miles E (Bleeser no. 237)”. This type is believed to have been destroyed during the Second World War (McKee 1963). According to Orchard (1999), Bleeser also sent specimens from the Northern Territory to K, MEL and NSW. No duplicates of the above Bleeser collection have been located in material of *Poranthera* on loan from K, and searches in MEL and NSW (by the first author) have also been unsuccessful. The collection *Chippendale 7856* (DNA) from approximately 16 km south east of Darwin is therefore chosen here as neotype of *P. coerulea* O.Schwarz. This collection agrees with the protologue description except that its leaves are slightly shorter in length than what Schwarz recorded for the species.

2. *Poranthera corymbosa* Brongn., *Ann. Sci. Nat. (Paris)* 29: 385 (1833); *Poranthera corymbosa* Brongn. var. *corymbosa*, Müll. Arg. in A.DC., *Prodr.* 15(2): 192(1866); *Poranthera corymbosa* var. *genuina* Müll.Arg. in A.DC., *Prodr.* 15(2): 192 (1866), *nom. inval.*; *Poranthera corymbosa* var. *linarioides* Grüning in A. Engler, *Pflanzenr.* Heft 58: 19 (1913), *nom. inval.*; *Poranthera linearoides* Baill., *Étude Euphorb.* 574, *Atlas* 45/6, t. 25, figs. 1-9 (1858), *nom. illeg.* **Type: [Australia.] Port Jackson, *s.d.*, [C.] *Gaudichaud 112* (lecto [here chosen]: P 152752).**

Poranthera arbuscula Sond., *Linnaea* 28: 567 (1856); *Poranthera corymbosa* var. *arbuscula* (Sond.) Müll.Arg. in A. DC., *Prodr.* 15(2): 192 (1866). **Type:** [New South Wales.] Fl. Novae Holl, *s.d.*, *Sieber 116* (lecto [here chosen]: MEL2062902 (ex herb. Sonder); isolecto: MEL2062901; 2065789).

? *Poranthera corymbosa* var. *sparsifolia* Grüning in A. Engler, *Pflanzenr.* Heft 58: 19 (1913). **Type citation:** “Neusudwales;

Parramatta (F. Mueller!). Queensland: Sandy Island (ohne Sammlernamen!).” (syntypes: *n.v.*).

Illustrations: Grüning (1913: 17, fig. 4A–E), as *Poranthera corymbosa* var. *arbuscula*; James & Harden (1990: 394); Jeanes (1999: 73, fig. 11c).

Monoecious, erect annuals or herbaceous perennials to 80 (rarely to 150) cm high. Stems sparingly branched; branchlets erect, smooth, glabrous, up to 6 mm across, with leaf scars prominent. Leaves sessile, alternate, crowded; stipules white, narrow-triangular, 2.3–3.8 mm long, entire; laminae linear or narrow-oblongate, (15–)20–90 mm long, 0.3–6 mm wide, flat with margins recurved to revolute, smooth and glabrous adaxially and abaxially, discolorous; midrib impressed proximally adaxially, prominent abaxially; base attenuate or cuneate; apex acute to obtuse. Flowers in short dense terminal umbel-like racemes; racemes in a lax leafy terminal corymb; peduncles up to 100 mm long; rachis 3–5 mm long; bracts narrow-obovate, 1.5–5 mm long, 0.3–1.3 mm wide, obtuse. Male flowers with pedicels 1–2.7 mm long; calyx lobes 5, white, obovate, 1.5–2.7 mm long, 0.7–1 mm wide, $\pm$ flat, rounded at apex; petals 5, white, erect, linear to oblanceolate, 0.7–0.9 mm long, 0.1–0.2 mm wide, acute, with margins entire; glands 2-lobed, 0.2–0.4 mm wide; stamens 5; filaments 1.3–1.8 mm long, slightly incurved; anthers 0.2–0.3 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.5–0.8 mm long. Female flowers with pedicels 0.8–2.5 mm long, extending to *c.* 5 mm in fruit; calyx lobes 5, white, obovate, 1.6–2.2 mm long, 0.8–1.3 mm wide, slightly concavo-convex, rounded at apex; petals 5, white, oblong, 0.5–0.8 mm long, 0.1–0.3 mm wide, obtuse, with margins entire; ovary depressed globose, 1.1–1.6 mm across, shallowly 6-lobed, slightly emarginate distally, smooth; styles each 0.9–1.5 mm long, deeply 2-partite, slender. Capsules depressed globose, 2.8–3.1 mm across, 1.6–2 mm long, shallowly 3-lobed, emarginate distally, $\pm$ smooth. Seeds wedge-shaped, 1.1–1.3 mm long, 0.8–0.9 mm wide, 0.8–0.9 mm across; testa reticulate, white.

Selected specimens (from 140 examined): **Queensland.** DARLING DOWNS DISTRICT: Mt Janet Road, Passchendaele State Forest, Oct 1997, *Bean 12478*

(BRI); 15.7 km SW of Stanthorpe, portion 87, Stalling Lane, Nov 1994, *Halford Q2321* (BRI). MORETON DISTRICT: Mount Ernest, McPherson Range, Sep 1990, *Forster PIF7397 et al.* (BRI, CANB, MEL, NSW); Stags Head, E ridge 2 km E of Mt Clunie, 32 km WSW of Rathdowney, Sep 1997, *Halford Q3546* (BRI). **New South Wales.** Carters Creek crossing, *c.* 16 km NNW of Nelligen, Feb 1980, *Adams 3450 & Gray* (CANB, NSW); 3 km SW of the Old Hut Creek crossing of Nethercote Road, Nullica State Forest, Oct 1985, *Albrecht 2050* (MEL, NSW); Blackheath Glen, Blue Mountains, Nov 1969, *Burgess s.n.* (CANB [CBG033397]); W side of Cox’s Gap, E of Bylong, Oct 1979, *Chapman 1553* (BRI, CANB, MEL, NSW); 2.4 km along the Flagstone Creek track from the Gulf Road, *c.* 19 km (direct) just W of N of Emmaville, Oct 1990, *Coveny 14619 et al.* (BRI, CANB, NSW); Wombeyan Caves along the road to Mittagong, Oct 1988, *Greuter 21387* (NSW); Edinburgh Castle, 8 km SSE of Woodenbong, Dec 1992, *Halford Q1554A* (BRI, NSW); *c.* 18 km NW of Sandy Hollow heading towards Merriwa, Sep 1990, *Henderson & Turpin H3413* (BRI); Torrington, New England, Sep 1969, *Jones 4068* (CANB); Turpentine Range, *c.* 10 miles (*c.* 16 km) W of Tomerong, Sep 1965, *McGillivray 1485* (NSW); *c.* 13 km W of Tomerong in the Sassafras Range, between Braidwood and Nowra, Nov 1968, *Pullen 4333* (CANB, NSW); Craters Creek, Currowan State Forest, WNW of Batemans Bay, Dec 1973, *Pullen & Story 8732* (BRI, CANB, NSW); 17 km E of Tianjara Falls along Turpentine Road, Aug 1984, *Stewart 96 et al.* (CANB, MEL). **Victoria.** Brisbane Ranges NP, Mt Wallace - Bacchus Marsh Road junction of Aeroplane Road, Oct 1977, *Beaulehole ACB56761 & Errey* (MEL); Pyrete Ranges, Oct 1982, *Kemp s.n.* (MEL 628611); Hard to Seed Track, 9.5 km SW of Genoa Peak, Oct 1983, *Walsh 1226* (MEL).

Distribution and habitat: *Poranthera corymbosa* occurs in south-eastern Australia from near Stanthorpe and the McPherson Range, in south-eastern Queensland, through New South Wales to East Gippsland, Victoria, with disjunct records from the Grampian, Pyrete and Brisbane Ranges, in western Victoria. It is recorded growing in heath, open eucalypt woodland or forest communities in mostly well-drained sandy soils overlying a variety of substrates. **Map 2.**

Phenology: Flowers have been collected throughout the year, but mainly from September to November, fruits from September to January.

Typification: In his protologue of *P. corymbosa*, Brongniart cited two collections, namely “ad Port-Jackson in Nova-Hollandia (*Gaudichaud et d’Urville* in herb. Mus. Par.)”. These Gaudichaud and Dumont d’Urville collections

have been located at P (numbered 152752 and 152751 respectively). The Gaudichaud specimen is selected here as lectotype of *Poranthera corymbosa* Brongn. as it is part of the original material, agrees with the protologue and is more than likely the material illustrated in the protologue.

In his protologue of *P. arbuscula*, Sonder cited two collections, namely “Nov. Holland. austral. (Dr F. Mueller)” and “Sieber Herb. Nov. Holl. no. 116 ex parte”. In MEL, there are three sheets of Sieber’s collection, numbered 2062901, 2065789 and 2062902, and one specimen labelled “*P. arbuscula*, *P. cicabricosa*, Nov. Holla. Austr. Ferd. Mueller”, numbered 2062936. They are all from Sonder’s herbarium. There is also a specimen in MEL numbered 694305 which is labelled “*Poranthera cicabricosa* f. mueller (1847) Encounter Bay [SA]” which matches the Mueller collection in the Sonder herbarium. We believe it to be a duplicate of that specimen. The Mueller and Sieber collections Sonder cited actually comprise two distinct taxa. The Sieber collection is conspecific with *P. corymbosa*, while the Mueller collection is undoubtedly conspecific with *P. huegelii* as circumscribed here. The Sieber specimen numbered 2062902 is selected here as lectotype of *P. arbuscula* Sond. as it is part of the original material, agrees with the protologue and is possibly annotated *P. arbuscula* by Sonder himself.

Notes: The plant Grüning named *P. corymbosa* var. *sparsifolia* is probably conspecific with *P. corymbosa* as treated here but we have been unable to examine the syntypes to verify this. However, from Grüning’s description it is reasonable to assume the two taxa are conspecific and not worthy of formal recognition. The supposed locality of collection of the syntype “Queensland, Sandy Island” is somewhat unusual for *P. corymbosa* as no other collections of this species we know of have been made on any of the coastal islands of Queensland. However, the locality of collection given for the other syntype, “Parramatta, F. Mueller”, is within the presently known geographical range of *P. corymbosa*.

Poranthera corymbosa is somewhat variable in leaf size and plant stature. However, there seems no justification for recognising

varieties within this species. Some small forms can be confused with *P. ericifolia* but can be distinguished from that by having entire stipules and generally more open, lax inflorescences.

3. *Poranthera dissecta* Halford & R.J.F.Hend., **sp. nov.** quoad habitu *P. triandrae* J.M.Black similis autem foliis anguste ovatis vel oblongis, stipulis profunde dissectis, floribus calycibus 5-lobis, pagina seminum minute striata differt. Olim collectiones *P. dissectae* ad *P. microphyllam* Brongn. relatae fuerunt sed *P. dissecta* a *P. microphylla* stipulis profunde dissectis, floribus capsulisque minoribus et pagina seminum striata differt. **Typus:** Western Australia. 22 km ESE of Lake King, 8 Aug 1968, *P.G. Wilson* 6892 (holo: PERTH).

Monoecious, prostrate annuals. Stems much branched; branchlets smooth, glabrous, up to 0.5 mm across, with leaf scars obscure. Leaves sessile, opposite or alternate, widely spaced along branchlets; stipules white, narrow-triangular, 0.8–1.1 mm long, deeply 2–4-lobed; laminae narrow-obovate or elliptic, 2–3.6 mm long, 0.9–1.5 mm wide, flat, smooth and glabrous adaxially and abaxially, concolorous; midrib obscure adaxially, slightly raised proximally abaxially; base attenuate; apex obtuse to rounded. Flowers in short dense terminal umbel-like racemes; racemes solitary; rachis c. 1 mm long; bracts narrow-obovate, 0.9–1.5 mm long, 0.2–0.4 mm wide, obtuse to rounded. Male flowers with pedicels 0.5–1.1 mm long; calyx lobes 5 (or sometimes 4), colour when living unknown, narrow-obovate or oblong, 0.4–0.5 mm long, 0.1–0.2 mm wide, concave-convex, acute to obtuse at apex; petals 5, colour when living unknown, erect, ovate, c. 0.1 mm long, up to 0.05 mm wide, acute, with margins toothed distally; glands obscure; stamens 3, filaments up to 0.2 mm long, straight; anthers up to 0.1 mm long; rudimentary ovary a minute, hemispherical dome. Female flowers with pedicels 0.3–0.6 mm long, extending to 1.5 mm long in fruit; calyx lobes 5, colour when living unknown, narrow-ovate or oblong, 0.5–0.6 mm long, 0.1–0.2 mm wide, concavo-convex, acute at apex; petals obscure or absent; ovary depressed globose, 0.4–0.6 mm across, deeply

6-lobed, emarginate distally, papillose; styles each 0.1–0.4 mm long, shortly divided distally, slender. Capsules depressed globose, 1–1.3 mm across, 0.6–0.7 mm long, prominently 6-lobed, emarginate distally, rugose. Seeds wedge-shaped, *c.* 0.4 mm long, *c.* 0.3 mm wide, to *c.* 0.3 mm across; testa striate with translucent ridges.

Fig. 1.

Additional specimens examined: Western Australia. *c.* 45 km N of Stokes Inlet, Oct 1968, *Eichler 20286* (CANB); Victoria Desert, camp 53, Sep 1891, *Helms s.n.* (NSW455348); Karolin [Karlgin], Sep 1891, *Helms s.n.* (MEL2065544); Mt Andrew, *c.* 120 km SE of Norseman, Sep 1980, *Newbey 7595* (PERTH).

Distribution and habitat: *Poranthera dissecta* occurs in scattered populations in southern Western Australia, in an area more or less bounded by Norseman, Ravensthorpe and Karlgin. It is recorded as growing in well-drained granitic loamy sand near granite outcrops. **Map 3.**

Phenology: Flowers and fruits have been collected from August to October.

Affinities: *Poranthera dissecta* resembles *P. triandra* in stature but differs from that by having narrow-ovate or oblong leaves, deeply dissected stipules, a 5-lobed calyx and a minutely striate seed surface. Collections of *P. dissecta* have been referred in the past to *P. microphylla*. *Poranthera dissecta* differs from *P. microphylla* by its deeply dissected stipules, smaller flowers and capsules and its striate seed surface.

Etymology: The specific epithet is derived from Latin, *dissectus*, dissected, in reference to the species' deeply dissected stipules.

4. *Poranthera drummondii* Klotzsch in J.G.C. Lehmann, *Pl. Preiss.* 2: 231 (1848); *Poranthera microphylla* var. *drummondii* (Klotzsch) Müll.Arg. in A.DC., *Prodr.* 15(2): 193 (1866). **Type:** [Western Australia.] In sands of the Swan River, in 1839, *J. Drummond s.n.* (syn: *n.v.*); [Western Australia.] Rotenest (Rottnest Island), 21 Aug 1839, *L. Preiss 2048* (syn: LD 99/018-0884; isosyn: B (ex herb. L.C. Treviranus), G-DC *n.v.* (IDC microfiche 800-73 2453: II.4); MEL 2062911, 2062926 (ex herb. Sonder)).

Monoecious, compact annuals to 15 cm high. Stems sparingly or much branched; branchlets erect or ascending, $\pm$ smooth, glabrous, up to 1.1 mm across, with leaf scars obscure. Leaves sessile, alternate, widely spaced along branchlets; stipules white, narrow-triangular, 1.3–2.5 mm long, entire or erose; laminae narrow-oblongate, 9–31 mm long, 1.4–3.5 mm wide, flat with margins slightly recurved, smooth and glabrous adaxially and abaxially, discolorous; midrib obscure adaxially, prominent or slightly raised proximally abaxially; base cuneate; apex rounded to obtuse. Flowers in short dense terminal umbel-like racemes; racemes solitary or several in a leafy terminal corymb; peduncles up to 25 mm long; rachis up to 3 mm long; bracts narrow-obovate, 2–6 mm long, 0.5–0.9 mm wide, obtuse to rounded. Male flowers with pedicels 0.8–2.2 mm long; calyx lobes 5, white, narrow-obovate, 1.4–1.5 mm long, 0.4–0.8 mm wide, $\pm$ flat, rounded at apex; petals 5, white, erect, narrow-ovate or oblanceolate, 0.1–0.8 mm long, up to 0.1 mm wide, acute, with margins entire; glands clavate, *c.* 0.1 mm wide; stamens 5; filaments 0.6–1 mm long, incurved; anthers *c.* 0.1 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.2–0.6 mm long. Female flowers with pedicels 0.8–1.5 mm long, extending to 4.5 mm in fruit; calyx lobes 5, white, narrow-obovate to oblong, 1–1.5 mm long, 0.4–0.7 mm wide, $\pm$ concavo-convex, rounded at apex; petals 5, white, narrow-ovate, 0.2–0.6 mm long, 0.1–0.2 mm wide, acute, with margins entire or erose; ovary depressed globose, 0.9–1 mm across, shallowly to deeply 6-lobed, emarginate distally, papillose; styles each 0.5–0.8 mm long, 2-partite, slender. Capsules depressed globose, 1.7–1.9 mm across, 0.5–0.6 mm long, shallowly 6-lobed, emarginate distally, somewhat rugose. Seeds wedge-shaped, 0.6–0.7 mm long, 0.5–0.7 mm wide, 0.3–0.5 mm across; testa alveolate, grey-white.

Selected specimens (from 30 examined): Western Australia. Guildford, Perth, Nov 1901, *Andrews s.n.* (PERTH); Dillon Bay, Oct 1963, *Aplin 2749* (PERTH); Cape Naturaliste, Oct 1978, *Aplin 6444* (PERTH); Cape Leeuwin, S of Augusta, Sep 1965, *Beaglehole ACB12508* (NSW, PERTH); S end of Garden Island, Oct 1978, *Cranfield 28* (PERTH); *c.* 3 km S of homestead, Dirk Hartog Island, Sep 1972, *George 11348* (PERTH); S outskirts of Kalbarri township, near Telecom tower, Sep 1988, *Henderson H3148A* (BRI); *c.* 10 km SW of Lake Indoon on Leeman Road, Sep 1977, *Hnatiuk 770965* (PERTH); Bremer Bay, Sep 1974, *Newbey 4385* (PERTH); Hamelin Bay, Oct 1953,

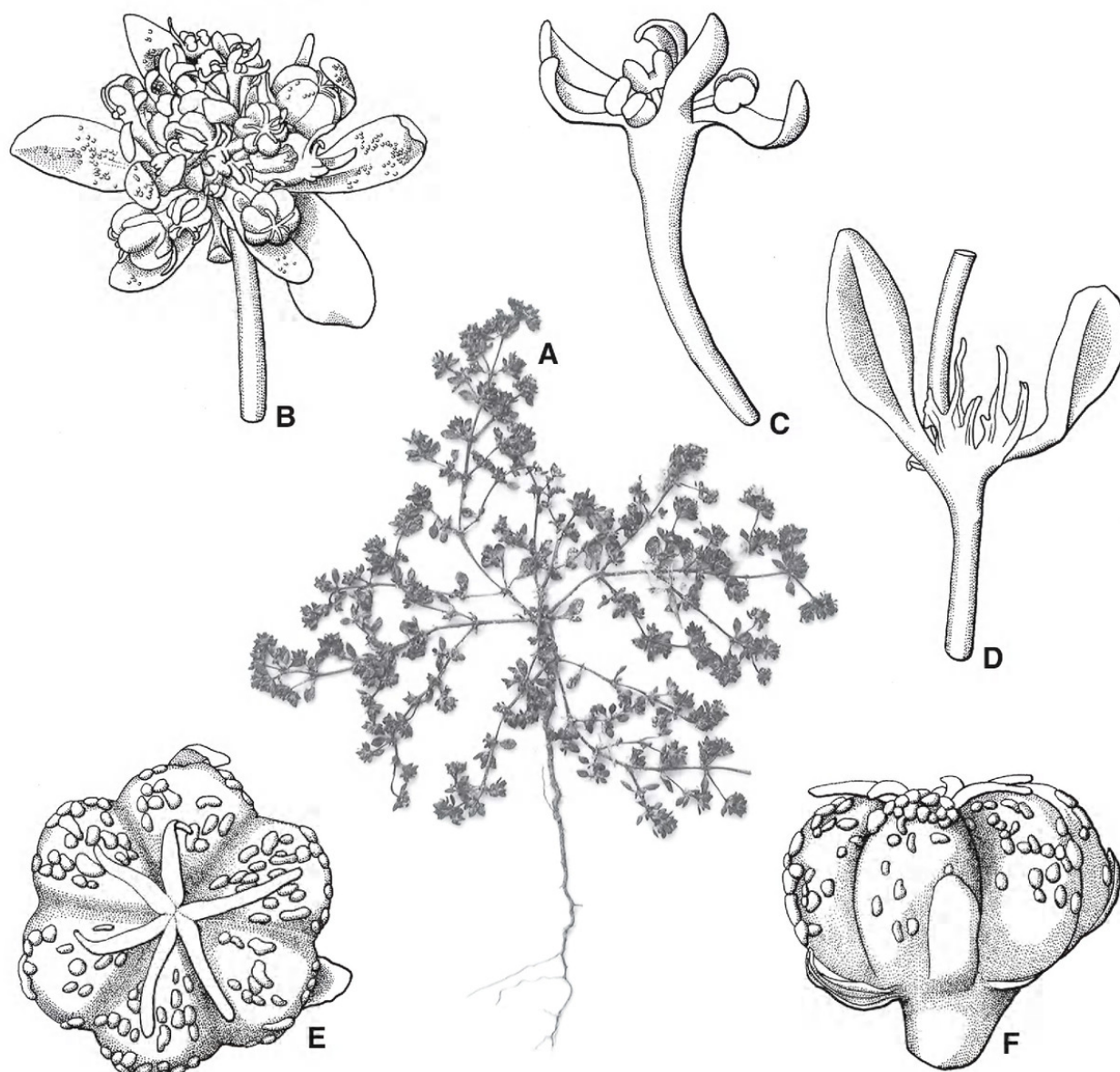


Fig. 1. *Poranthera dissecta*. A. whole plant $\times 1$. B. inflorescence $\times 8$. C. male flower $\times 32$. D. branchlet with leaf and stipules $\times 12$. E. fruit from above $\times 32$. F. fruit from side $\times 32$. A from Wilson 6892 (PERTH); B-F from Eichler 20286 (CANB). Del. W. Smith.

Royce 4644 (PERTH); Nambung NP, Cervantes, Oct 1971, Royce 9780 (PERTH); Yanchep NP, Nov 1965, Scrymgeour 160 (PERTH); Helena Valley, Sep 1977, Seabrook 257 (PERTH); Champion Bay, 1889, Sewell s.n. (MEL2065488); c. 10.7 km from Coorow, along road to Marchagee, Oct 1983, Short 2202 (MEL); Rottnest Island, Aug 1956, Storr 172 (PERTH); by scenic drive just NE of Cape Leeuwin, Nov 1982, Strid 21403 (PERTH).

Distribution and habitat: *Poranthera drummondii* is confined to the coastal and subcoastal districts of south-west Western Australia, from Dirt Hartog Island southward to Augusta and eastward to Dillon Bay near Albany. It is recorded as growing in heathland, shrubland or open woodland communities in

mostly sandy soils. **Map 4.**

Phenology: Flowers have been collected from August to November, fruits from September to November.

Affinities: Müller (1866) reduced this species to a variety of *P. microphylla*, while Bentham (1873) included it in *P. microphylla* without giving it formal recognition. Although *P. drummondii* is somewhat similar to the Western Australian populations of *P. microphylla*, it can easily be distinguished from that by its larger flowers and alveolate seed surface.

Notes: The collection *Henderson H3148B* (BRI) has seeds that are more or less reniform with a faintly reticulate surface. This gathering was part of the collection *Henderson H3148A* (BRI) which is typical of *P. drummondii* with wedge-shaped seeds and an alveolate seed surface. More collections and further research are required to determine if this specimen represents a form requiring formal recognition.

5. *Poranthera ericifolia* Rudge, *Trans. Linn. Soc. London* 10: 301–303 (1811). **Type:** [New South Wales.] Port Jackson, *s.d.*, [without collector] (holo: BM *n.v.* (transparency at BRI)).

Illustration: James & Harden (1990: 394).

Monoecious, erect, herbaceous perennials 10–30 cm high. Stems sparingly to much branched from base; branchlets erect, smooth or papillose, glabrous, 2–3 mm across, with leaf scars prominent. Leaves sessile, alternate, crowded; stipules white, narrow-triangular, 1.4–2 mm long, lacinate; laminae linear or narrow-oblongate, 8–15 mm long, 0.6–2 mm wide, flat to rounded with margins recurved to revolute, smooth and glabrous adaxially and abaxially, discolorous; midrib impressed proximally adaxially, prominent abaxially; base attenuate or cuneate; apex obtuse to subacute. Flowers in a short dense terminal umbel-like racemes; racemes in a compact leafy terminal corymb; peduncles 10–20 mm long; rachis 2–5 mm long; bracts narrow-obovate, 2–4 mm long, 0.5–0.9 mm wide, obtuse. Male flowers with pedicels 1.5–2 mm long; calyx lobes 5, pink or white, obovate, 1.7–2.2 mm long, 0.8–1 mm wide, $\pm$ concavo-convex, rounded at apex; petals 5, white, erect, recurved distally, linear to oblanceolate, 0.9–1.1 mm long, 0.2–0.3 mm wide, acute or obtuse, with margins entire; glands 2-lobed, 0.2–0.4 mm wide; stamens 5; filaments 1.8–2 mm long, slightly incurved; anthers 0.1–0.2 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.7–1 mm long. Female flowers with pedicels 0.9–2.2 mm long, extending to *c.* 3 mm long in fruit; calyx lobes 5, white or pink, oblong, 1.5–2 mm long, 0.6–0.8 mm wide, $\pm$ concavo-convex, rounded at apex; petals 5, white, linear-oblong, 0.5–0.9 mm long, 0.1–0.2 mm wide, acute, with margins entire; ovary depressed globose, 1–1.5 mm across, deeply 6-lobed, emarginate distally, smooth; styles each 0.9–1.4 mm long, deeply 2-partite,

slender. Capsules depressed globose, 2.4–2.9 mm across, 1.4–1.6 mm long, shallowly 6-lobed, emarginate distally, papillose. Seeds wedge-shaped, 0.9–1.1 mm long, 0.7–0.9 mm wide, 0.8–0.9 mm across; testa reticulate, white.

Selected specimens (from 60 examined): **New South Wales.** Gospers Mountain, Apr 1983, *Benson & Keith 1416* (NSW); near Wyong, Oct 1948, *Burbidge 2869* (CANB); Wentworth Falls, King's Tableland, Nov 1962, *Burgess s.n.* (CANB [CBG001710]); Mt Manning (Bucketty), Sep 1963, *Burgess s.n.* (CANB [CBG001619]); Victoria Falls Road, Blue Mountains, Dec 1947, *Constable s.n.* (NSW); Belrose, Nov 1981, *Coveny 11055 & Hind* (NSW); Kioloa State Forest, Oct 1966, *Evans 2515* (NSW); near Sublime Point, Leura, Dec 1961, *Goode 528* (NSW); on road to Mt Hay, *c.* 4 km N of Leura, Blue Mountains NP, Oct 1990, *Henderson & Turpin H3419* (BRI); Comleroy Road near entrance to Wollemi NP, Oct 1987, *Hind 5393 et al.* (BRI, NSW); 1.8 km along Forest Road towards Currawong, Sep 1995, *Jobson 3785* (MEL); “Eagle Rock”, N of Mogo Creek Road, 20 km S of Bucketty towards St Albans, Oct 1996, *Jobson 4422* (NSW); Mt Kindarun, 14 miles (*c.* 22 km) NNW of Putty, Sep 1959, *Johnson & Constable s.n.* (NSW); Walls lookout, Pierces Pass, near Mt Banks, Dec 1970, *Lassak s.n.* (NSW); Mt Victoria, Nov–Dec 1889, *Maiden s.n.* (NSW); “Big Hill”, Mittagong, Dec 1960, *Mowle 47* (CANB); Tarougra Forest Road, 2 km E of Bodalla along Potato Point Road, Oct 1986, *Mullins 702* (CANB); northern Budawang Range, Camping Rock Creek, S of Sassafras, Oct 1971, *Pulley & Telford BR270* (CANB); 3 km N of Karuah on Pacific Hwy, Aug 1967, *Telford 211* (CANB); near old sawmill, 10 miles (*c.* 16 km) S of Sassafras, Oct 1965, *Whaite 2916* (NSW).

Distribution and habitat: *Poranthera ericifolia* is confined to coastal and subcoastal areas of New South Wales, from Weston southwards to Nowra. It is recorded as growing in heathland, shrubland, and eucalypt woodland or open forest communities usually in sandy soils derived from sandstone. **Map 5.**

Phenology: Flowers have been collected in April and from July to December, fruits in February, March and from September to December.

Notes: *Poranthera ericifolia* has been confused with *P. corymbosa* but is easily distinguished from that by having lacinate stipules, smaller leaves and shorter and more compact habit.

6. *Poranthera ericoides* Klotzsch in J.G.C. Lehmann, *Pl. Preiss.* 2: 231 (1848); *Poranthera ericoides* Klotzsch var. *ericoides*, Domin, *Vestn. Kral. Ceske*

Spolecn. Nauk. Tr. Mat.-Prir. (Mém. Soc. Roy. Sci. Bohême, Prague) 1921/2(2): 58 (1923); *Poranthera ericoides* var. *typica* Domin, *Vestn. Kral. Ceske Spolecn. Nauk. Tr. Mat.-Prir. (Mém. Soc. Roy. Sci. Bohême, Prague)* 1921/2(2): 58 (1923), *nom. inval.* **Type:** [Western Australia.] Hay, 7 Nov 1840, *L. Preiss 2050* (holo: LD 99/018-0885; iso: MEL 2062927 (ex herb. Sonder)).

Poranthera piceoides Klotzsch in J.G.C. Lehmann, *Pl. Preiss.* 2: 232 (1848). **Type:** [Western Australia.] In sand in forest near Bull's Creek, Perth, Nov 1841, *L. Preiss 2044* (syn: LD 99/018-0889; isosyn: G-DC *n.v.* (microfiche IDC 800-73. 2453: I.7); MEL 617990, 2062929 (ex herb. Sonder); [Western Australia.] In sand in the shade in forest near Pine-Aple [Pineapple inn, near Perth, *fide* Marchant 1990], 14 Sep 1830, *L. Preiss 1227* (syn: LD 99/018-0888; isosyn: G-DC *n.v.* (microfiche IDC 800-73. 2453: I.7 (top element))); MEL 2062908 (ex herb. Sonder), 1617991).

Monoecious, compact, herbaceous perennials to 15 cm high. Stems much branched at base; branchlets erect or procumbent, smooth or papillose, glabrous, 0.6–2.5 mm across, with leaf scars prominent. Leaves $\pm$ sessile, alternate, crowded on branchlets; stipules white, narrow-triangular, 0.6–1.1 mm long, entire; laminae linear, 4–10 mm long, 0.5–1.4 mm wide, rounded with margins recurved to midrib, smooth and glabrous adaxially and abaxially, concolorous; midrib obscure adaxially, prominent abaxially; base cuneate; apex obtuse. Flowers in short dense terminal umbel-like racemes; racemes solitary or several in a leafy compact terminal corymb; peduncles up to 15 mm long; rachis up to 4 mm long; bracts narrow-obovate, 2–3.5 mm long, 0.6–0.8 mm wide, acute to obtuse. Male flowers with pedicels 1–1.7 mm long; calyx lobes 5, white or sometimes with pinkish hue, oblong or obovate, 1.2–2 mm long, 0.5–0.8 mm wide, $\pm$ flat, rounded at apex; petals 5, white, erect, oblanceolate, 0.5–0.9 mm long, 0.2–0.4 mm wide, acute, obtuse to rounded, with margins entire; glands 2-lobed, 0.1–0.3 mm wide; stamens 5, filaments 1.3–2 mm long, slightly incurved; anthers *c.* 0.2 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.6–0.8 mm long. Female

flowers with pedicels 0.5–1.5 mm long, extending to *c.* 5 mm long in fruit; calyx lobes 5, white sometimes with a pinkish hue, oblong, 1.3–1.8 mm long, 0.4–0.8 mm wide, $\pm$ flat, rounded at apex; petals 5, white, linear-oblong, 0.7–0.8 mm long, 0.3–0.4 mm wide, acute to obtuse, with margins entire; ovary globose, 1–1.7 mm across, shallowly to deeply 6-lobed, emarginate distally, smooth or papillose; styles each 1.1–1.5 mm long, deeply 2-partite, slender. Capsules depressed globose, 2–2.5 mm across, *c.* 1.5 mm long, prominently to shallowly 6-lobed, emarginate distally, rugose. Seeds wedge-shaped or rarely reniform, 1–1.2 mm long, 0.6–0.8 mm wide, 0.6–0.8 mm across; testa smooth and white or rarely verrucate and pale brown.

Selected specimens (from 35 examined): Western Australia. Between Kukerin and Lake Grace, Nov 1931, *Blackall 1351* (PERTH); near Yanchep, 2 km from Wanneroo Road towards Gingin, Oct 1981, *Craven 6964* (MEL); Wanneroo, Nov 1976, *Demarz D6219* (PERTH); Gnangarra, Oct 1945, *Gardner s.n.* (PERTH); 18 miles (*c.* 29 km) E of Cranbrook, on Chester Pass Road, Nov 1959, *George 398* (PERTH); 3 miles (*c.* 5 km) N of Qualeup homestead, Nov 1960, *George 1780* (PERTH); Albany Hwy, N [of] Cranbrook turnoff, Nov 1961, *George 3097* (PERTH); near junction of Red Gum Pass road with Salt River Road, near NW boundary of Stirling Range NP, Sep 1988, *Henderson H3197* (BRI); 4.5 km W of Tarin Rock, Sep 1976, *Hnatiuk 761350* (PERTH); between Toll's Creek and Solomon's Well, Oct 1902, *Morrison s.n.* (PERTH); 1 mile (*c.* 1.6 km) E of Tambellup, Oct 1963, *Newbey 1155* (PERTH); 7 miles (*c.* 11 km) S of Wagin, Oct 1962, *Phillips s.n.* (CANB [CBG024913], NSW); near Gingin, and 15 miles (*c.* 24 km) from Muchea, Sep 1968, *Phillips 1855* (CANB, NSW); 5 km E of Tincurrin, Oct 1982, *Rechinger 59109* (PERTH); Moore River NP, Oct 1971, *Royce 9491* (PERTH); Talbot Brook, York, Sep 1921, *Sargent s.n.* (PERTH); 3 miles (*c.* 5 km) S of Gingin, Sep 1966, *Scrymgeour 1308* (PERTH); along No. 2 Rabbit Proof Fence, *c.* 40 km SSE of Jerramungup-Ravensthorpe road and *c.* 25 km N of Bremer Bay, Oct 1966, *Wilson 4353* (PERTH); 20 miles (*c.* 32 km) from Pingelly towards Wandering, on north road, Oct 1968, *Wrigley s.n.* (CANB [CBG027813]); 11 miles (*c.* 18 km) from Kukerin toward Lake Grace, Nov 1968, *Wrigley WA/68 5732* (CANB).

Distribution and habitat: *Poranthera ericoides* is confined to south-western Western Australia from Winchester south east to near Ravensthorpe. It is recorded as growing in closed heath or mallee communities with a heath-like understorey in sand or sandy loam soils sometimes with gravel in the profile. **Map 6.**

Phenology: Flowers have been collected from September to November, fruits in November.

Affinities: *Poranthera ericoides* has been confused in the past with *P. huegelii*. *Poranthera ericoides* differs from that in the texture of its seed surface and in usually having a more compact habit.

Notes: The inflorescence of *P. ericoides* is typically a more or less compact corymb, but there is a variant which has a more open and lax inflorescence somewhat resembling those in some forms of *P. huegelii*. This variation is particularly prevalent in material from the northern end of the range of *P. ericoides*, e.g. *Craven 6964* (MEL), *Phillips 1855* (CANB), *Royce 9491* (PERTH) and *Scrymgeour 1308* (PERTH).

There is a collection at PERTH (*Coleby-Williams 312*) from near Winchester which is c. 130 km north of the nearest other locality of collection of *P. ericoides* (in the Moore River National Park). This specimen is a plant which has a low compact habit typical of *P. ericoides* but its inflorescence is more corymbose than what is typical in *P. ericoides*. The collection *Newbey 4593* at PERTH, from near Chillicup Pool, is a plant with a more open spreading habit than that of the typical form of *P. ericoides*. More collections, especially of fruiting material, and further field investigations are required to determine if any of these forms are worthy of formal recognition.

7. *Poranthera florosa* Halford & R.J.F.Hend., **sp. nov.** maxime arcte affinis *P. drummondii* Klotzsch cum signis multis communiter autem foliis spathulatis folia angusta oblanceolata *P. drummondii* Klotzsch plerumque latioribus et insuper ab ea habitu leviter robustiore et inflorescentia plus florosa differt. **Typus:** Western Australia. Thumb Peak Range, 31 Oct 1965, *A.S. George 7134* (holo: PERTH; iso: PERTH).

Poranthera microphylla var. *intermedia* Müll.Arg. in A. DC., *Prodr.* 15(2): 193 (1866). **Type:** [Western Australia.] In moist hollows of rocks at eastern side of mountain, Melville, (Plantagenet), 5 Oct 1840, [*L.*] *Preiss 2045* (lecto, here chosen:

LD99/018-0887 (specimen on left of sheet); isolecto: MEL 2062930, 2062930).

Monoecious, diffuse annuals to 20 cm high. Stems much branched from base; branchlets ascending to decumbent, smooth, glabrous, up to 2.5 mm across, with leaf scars obscure. Leaves sessile, alternate, widely spaced along branchlets; stipules white, narrow-triangular, 0.7–1.1 mm long, entire; laminae spatulate, 9–25 mm long, 2.5–5 mm wide, flat with margins slightly recurved, smooth and glabrous adaxially and abaxially, discolorous; midrib obscure adaxially, prominent abaxially; base attenuate; apex obtuse to rounded. Flowers in short dense terminal umbel-like racemes; racemes several in a leafy terminal corymb; peduncles up to 25 mm long; rachis up to 3 mm long; bracts narrow-obovate, 1.8–3 mm long, 0.4–0.8 mm wide, obtuse to rounded. Male flowers with pedicels 1.5–3.1 mm long; calyx lobes 5, white, obovate, 1.1–1.5 mm long, 0.5–0.7 mm wide, $\pm$ flat, rounded at apex; petals 5, white, erect, oblanceolate to narrow-obovate, 0.6–0.7 mm long, 0.1–0.3 mm wide, acute to obtuse, with margins entire; glands obdeltate, 0.2–0.3 mm wide; stamens 5; filaments 1.1–1.4 mm long, incurved; anthers c. 0.1 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.5–0.6 mm long. Female flowers with pedicels 1.2–2.2 mm long, extending to 5.5 mm long in fruit; calyx lobes 5, white, oblong-obovate, 1.1–1.3 mm long, 0.4–0.7 mm wide, slightly concavo-convex, rounded at apex; petals 5, white, oblong, 0.3–0.4 mm long, 0.1–0.2 mm wide, acute, with margins entire; ovary depressed globose, 0.6–1 mm across, deeply 6-lobed, emarginate distally, papillose; styles each 0.5–1.1 mm long, deeply 2-partite, slender. Capsules depressed globose, 1.5–1.7 mm across, 0.9–1.1 mm long, shallowly 6-lobed, emarginate distally, rugose. Seeds wedge-shaped, 0.6–0.8 mm long, 0.4–0.5 mm wide, 0.4–0.5 mm across; testa alveolate, grey-white. **Fig. 2.**

Selected specimens (from 10 examined): Western Australia. Scott River, Dec 1957, *Churchill s.n.* (PERTH); Chespeck Road, Northcliffe, Dec 1983, *Cranfield 4880* (PERTH); Fitzgerald River, Sep 1948, *Gardner 9215* (PERTH); base of Talyuberup Peak, Stirling Range, Oct 1984, *Keighery 7278* (CANB, PERTH); W of Mt Magog, Stirling Range, Nov 1969, *Mann & George 146* (K, PERTH); Plantagenet, Nov 1901, *Pritzel 929* (PERTH); Bremer Bay, in 1900, *Wellstead s.n.* (PERTH).

Distribution and habitat: *Poranthera florosa* is confined to south-western Western Australia from Scott River and Boggy Lake eastwards to the Stirling Range, Thumb Peak Range and Cape Arid. It is recorded as growing in heath, eucalypt mallee or woodland communities in stony sandy clay or clayey loam soils, or on the edge of granite outcrops. **Map 7.**

Phenology: Flowers have been collected from September to December, fruits from October to December.

Affinities: *Poranthera florosa* is most closely related to *P. drummondii* with which it shares many attributes. However, it differs from that by having spatulate leaves which are generally broader than the narrow-oblong leaves of *P. drummondii*. *Poranthera florosa* also differs from that by its slightly more robust growth habit and more floriferous inflorescence.

Typification: In his protologue of *P. microphylla* var. *intermedia*, Müller cited Preiss no. 2045 at the Berlin Herbarium. The type material of *P. microphylla* var. *intermedia* has not been located at B, and it is believed to have been destroyed during World War II. Duplicates of Preiss no. 2045 have been located at LD (one sheet) and MEL (two sheets). While the MEL sheets are all of one species, the sheet at LD contains material of two species. The smaller of the two specimens on that sheet, the fragment on the right, has flowers, fruit and seed and is referable to *P. microphylla* as circumscribed here. The specimen on the left of the sheet has flowers and is what we consider to be the species here named *P. florosa*. The Preiss duplicates at MEL match the specimen on the left of the LD sheet. Both specimens on the LD sheet would fit the brief description in the protologue of *P. microphylla* var. *intermedia*. To fix the application of the name then, the specimen on the left of this sheet is chosen here as lectotype of *P. microphylla* var. *intermedia*.

Etymology: The specific epithet is derived from Latin, *florosus*, profusely flowering, and refers to the more floriferous inflorescences produced by this species in comparison with those of *P. drummondii*.

8. *Poranthera huegelii* Klotzsch in J.G.C. Lehmann, *Pl. Preiss.* 2: 231–232 (1848).

Type: [Western Australia.] In subpeaty sandy soil between dense shrubs on plain near city of Albany (Plantagenet), Oct 1840. *Preiss. hb.* 2047 (holo: LD 99/018-0886; iso: B (ex herb. L. C. Treviranus); G-DC *n.v.* (microfiche IDC 800-73. 2453: II.1); MEL1617992, 2062909 (ex herb. Sonder)).

Illustration: Weber (1986: 763, fig. 407A), as *Poranthera ericoides*.

Monoecious, erect or rarely spreading, herbaceous perennials 30–60 cm high. Stems undivided or sparingly branched; branchlets erect or sometimes ascending, smooth, glabrous, up to 4 mm across, with leaf scars somewhat prominent. Leaves sessile, alternate, somewhat widely spaced along branchlets; stipules white, narrow-triangular, 1.1–3 mm long, entire or lacinate at the base; laminae linear, narrow-oblongate or narrow-elliptic, 9–26 mm long, 0.5–2.4 mm wide, flat to rounded with margins recurved, smooth and glabrous adaxially and abaxially, discolorous; midrib impressed proximally adaxially, prominent abaxially; base shortly cuneate; apex acute to obtuse sometimes terminated with a minute mucro. Flowers in short dense terminal umbel-like racemes; racemes in a lax leafy terminal corymb; peduncles up to 30 mm long; rachis up to 3 mm long; bracts narrow-obovate, 3–6 mm long, 0.5–1 mm wide, subacute to obtuse. Male flowers with pedicels 0.9–3 mm long; calyx lobes 5, white, obovate, 1.6–2.4 mm long, 0.6–0.9 mm wide, $\pm$ concavo-convex, rounded at apex; petals 5, white, erect, linear to oblongate, 0.6–1.6 mm long, 0.2–0.3 mm wide, acute to rounded, with margins entire; glands 2-lobed, 0.2–0.4 mm wide; stamens 5; filaments 1.7–2.7 mm long; anthers *c.* 0.2 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.7–1.4 mm long. Female flowers with pedicels 0.3–1.7 mm long, extending to *c.* 4.5 mm in fruit; calyx lobes 5, white, oblong, 1.6–2.5 mm long, 0.5–1.1 mm wide, slightly concavo-convex, rounded at apex; petals 5, white, linear-oblong, 0.5–1.2 mm long, 0.3–0.4 mm wide, acute to obtuse, with margins entire; ovary subglobose, 1.1–1.6 mm across, shallowly 6-lobed, emarginate distally, smooth; styles each 1–1.7 mm long, deeply 2-partite, slender. Capsules depressed globose, *c.* 3 mm across, *c.* 2 mm long,

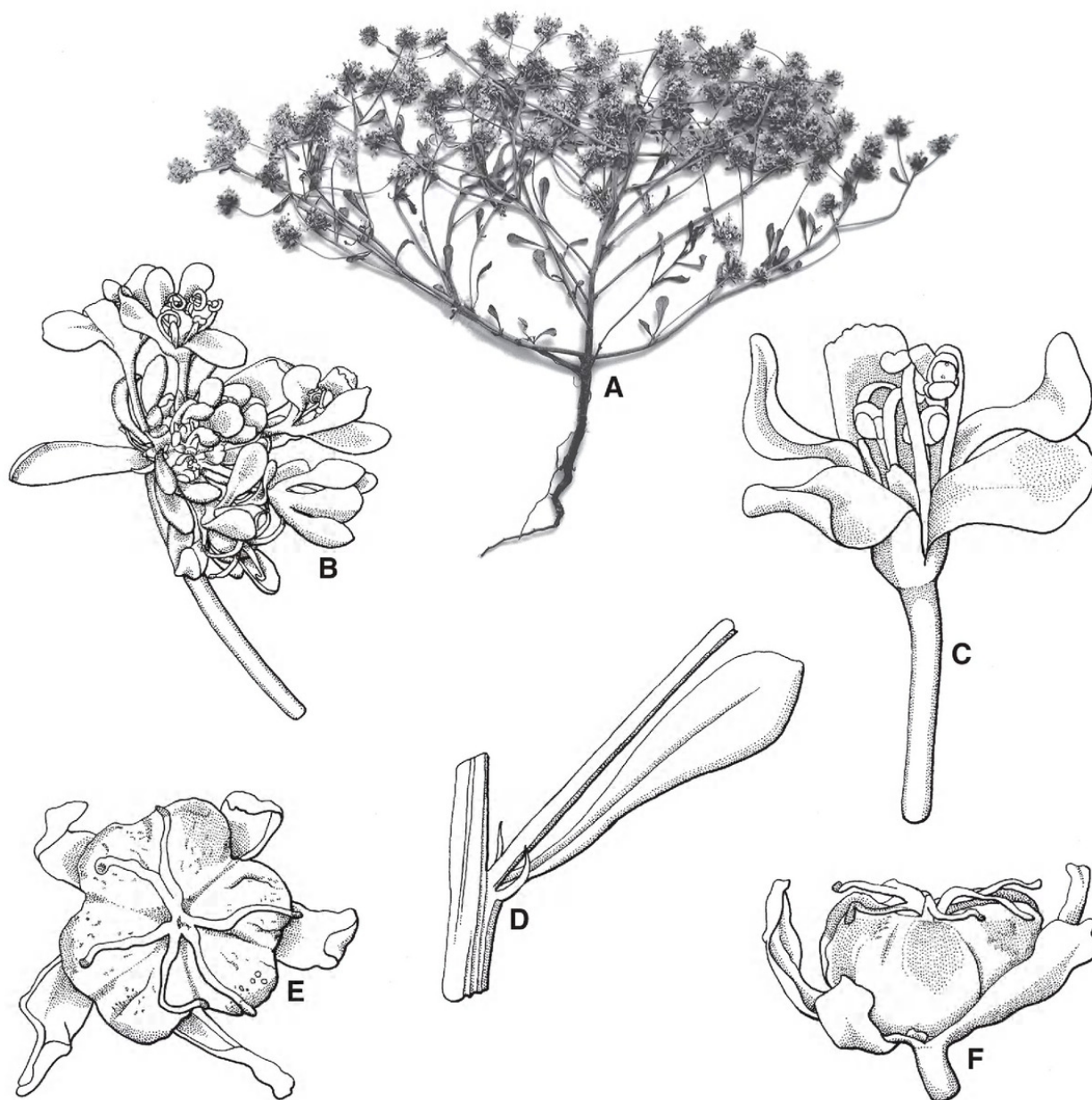


Fig. 2. *Poranthera florosa*. A. whole plant $\times 0.5$. B. inflorescence $\times 8$. C. male flower $\times 32$. D. branchlet with leaf and stipules $\times 8$. E. fruit from above $\times 16$. F. fruit from side $\times 16$. A–D from *George 7134* (PERTH); E, F from *Churchill s.n.* (PERTH). Del. W. Smith.

shallowly 3-lobed, emarginate distally, $\pm$ smooth. Seeds wedge-shaped, 0.8–1 mm long, 0.6–0.8 mm wide, 0.6–0.7 mm across; testa fenestrellate, translucent.

Selected specimens (from 90 examined): Western Australia. Jarrahdale, Oct 1908, *Andrews s.n.* (PERTH); 3 miles (c. 5 km) from Mt Barker towards Albany, Oct 1968, *Canning s.n.* (CANB [CBG038356]); 5 km S of Margaret River township on Caves Road, Oct 1983, *Corrick 8968* (MEL); E of Cape Naturaliste, near Castle Bay, Oct 1983, *Corrick 9005* (MEL); Mt Dale Road between main picnic area and corner of Ashendon Road, Darling Range, Oct 1984, *Corrick 9369* (CANB, MEL); Scarp Road, S of Serpentine

Pipehead Dam, Nov 1984, *Corrick 9396* (MEL); Thumb Peak Range, Oct 1965, *George 7135* (PERTH); Gooseberry Hill, Oct 1897, *Helms s.n.* (PERTH); 7.2 km W of Point Malcolm Junction, Sep 1976, *Hnatiuk 761083* (PERTH); Washpool Road, 200 m E of Junction with Knights Road, 6 km S of intersection Woogenilup and Knights Road, Oct 1985, *Hoyle 1117* (CANB); Norman's Beach, North Point, 31 km due NE of Albany, Oct 1985, *Hoyle 1481* (CANB); Baby Barnett Hill, 30 km due NNE of Mt Barker township, Oct 1985, *Hoyle 1152* (CANB); 31 km S of Manjimup on South-West Hwy, Oct 1993, *Jobson 2513* (MEL); upper slopes of Mondurup Peak, Oct 1977, *Keighery 1195* (PERTH); 3 miles (c. 5 km) N of Mt Success, Oct 1962, *Newbey 594* (PERTH); 35 miles (c. 56 km) S of Perth on Albany Hwy, near Mt Cooke, Nov 1972, *Paust 1070*

(PERTH); summit of Mt Toolbrunup, Mar 1966, *Spratt 19* (PERTH). **South Australia.** Flinders Chase, Kangaroo Island, near Breakneck Creek, Nov 1973, *Nelson ANU17292* (CANB); Playford Hwy, near Roo Lagoon, Kangaroo Island, Nov 1989, *Overton 1140* (CANB); Ridge road near Yankalilla turn off, Fleurieu Peninsula, Dec 1967, *Symon 5501* (CANB); Flinders Chase, Kangaroo Island, Oct 1971, *Wace ANU13082* (CANB).

Distribution and habitat: *Poranthera huegelii* has a disjunct distribution. It occurs in south-western Western Australia from New Norcia southwards to Augusta and eastwards to Israelite Bay, and in South Australia on Kangaroo Island and in the South Mount Lofty Ranges. It is recorded as growing in *Eucalyptus* woodland and open forest, and heath-mallee communities, often in sandy or gravelly lateritic soils. **Map 8.**

Phenology: Flowers have been collected in March and from August to December, fruits in January, October and December.

Affinities: *Poranthera huegelii* seems most closely related to *P. corymbosa* but is distinguishable from that and all other species of *Poranthera* by its fenestrellate seed coat.

Notes: *Poranthera huegelii* shows variation in habit and the form of the inflorescence which relates somewhat to the geographical distribution of the species. Specimens from the western part of its range (from near New Norcia southward to Augusta) have an erect, more or less unbranched habit with widely spaced leaves along the stem and a diffuse corymbose inflorescence. Specimens from the eastern part of its range (from Mt Barker eastward to Israelite Bay, Western Australia, and from Kangaroo Island and the South Mount Lofty Ranges in South Australia) tend to have a shorter and more branched habit, more crowded leaves and a more compact corymbose inflorescence. This eastern form has in the past been incorrectly identified as *P. ericoides* (e.g. by Weber 1986).

Specimens from the Stirling Range, Western Australia, (e.g. *Keighery 1195* (PERTH) and *Spratt 19* (PERTH)) tend to have an even shorter stature than those from the eastern part of the species' range. More collections and further investigations would be required to determine whether or not either of these forms warrants formal recognition.

9. *Poranthera leiosperma* Halford & R.J.F.Hend., **sp. nov.** maxime arcte affinis *P. microphyllae* Brongn. cum signis multis communiter autem pagina seminum laevi ad invicem tuberculata, foliis longioribus (11–15 mm longis vice 6–11 mm longis), stipulis longioribus (1.3–1.6 mm longis vice 0.8–1.3 mm longis) et insuper ab ea habitu leviter robustiore differt. **Typus:** Western Australia. 47 miles (c. 76 km) ENE of Laverton, 28 Sep 1966, *A.S. George 8098* (holo: PERTH).

Monoecious, spreading annuals to 10 cm high. Stems much branched at base; branchlets procumbent or erect, smooth, glabrous, 0.7–0.9 mm across, with leaf scars obscure. Leaves sessile, alternate or opposite, widely spaced along branchlets; stipules white, narrow-triangular, 1.3–1.6 mm long, entire; laminae narrow-obovate, 11–15 mm long, 2.1–4.1 mm wide, flat with margins slightly recurved, smooth and glabrous adaxially and abaxially, discoloured; midrib impressed proximally adaxially, slightly raised proximally abaxially; base attenuate; apex obtuse. Flowers in short dense terminal umbel-like racemes; racemes solitary; peduncles up to 13 mm long; rachis up to 4 mm long; bracts narrow-obovate, 4–5 mm long, 0.7–1 mm wide, apically rounded. Male flowers with pedicels 0.8–1 mm long; calyx lobes 5, white, obovate, 0.7–0.8 mm long, 0.4–0.5 mm wide, slightly concavo-convex, rounded at apex; petals 5, white, erect, oblanceolate, 0.2–0.3 mm long, c. 0.1 mm wide, acute, with margins entire; glands clavate, c. 0.1 mm wide; stamens 5; filaments 0.5–0.6 mm long, incurved; anthers c. 0.1 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.2–0.3 mm long. Female flowers with pedicels 0.8–1 mm long, extending up to 7 mm long in fruit; calyx lobes 5, pink, oblong-elliptic, 0.7–0.8 mm long, 0.4–0.5 mm wide, slightly concavo-convex, rounded at apex; petals 5, white, linear-oblanceolate or narrow-obtrullate, c. 0.2 mm long, 0.1–0.2 mm wide, acute, with margins entire; ovary depressed globose, 0.8–1 mm across, shallowly 6-lobed, slightly emarginate distally, smooth; styles each 0.3–0.5 mm long, deeply 2-partite, slender. Capsules depressed globose, 1.6–1.8 mm across, 0.9–1 mm long, shallowly 3-lobed, emarginate distally, ± smooth. Seeds wedge-shaped, 0.7–1.2 mm long, 0.4–0.9 mm wide, 0.5–0.6 mm across; testa smooth, white. **Fig. 3.**

Selected specimens (from 25 examined): **Western Australia.** Entrance to Cape Le Grand NP, Nov 1979, *Cranfield s.n.* (PERTH); 10 km NW of Southern Cross on Bullfinch Road, Sep 1980, *Cranfield 1643* (PERTH); E of Laverton, Jul 1916, *Gardner 172* (PERTH); Victoria Desert, camp 53, Sep 1891, *Helms s.n.* (MEL2065543, NSW273990, NSW455349, NSW455351); 5.2 km W of Zanthus, Oct 1986, *Keighery & Alford 761* (PERTH); Parker's Range, in 1890, *Merrall s.n.* (MEL2065489); Comet Vale, Sep 1953, *Royce 4414* (PERTH); 8 miles (c. 13 km) S of Queen Victoria Spring, Oct 1956, *Royce 5531* (PERTH); 24 km E of Depot Springs Homestead, Aug 1970, *Wilson s.n.* (PERTH). **Northern Territory.** Kings Canyon, George Gill Range, Oct 1966, *Beaglehole ACB20404* (DNA, NSW); Reedy Creek Gorge, 4 miles (c. 6 km) E of Kings Canyon, George Gill Range, Oct 1966, *Beaglehole ACB20473A* (NSW). **South Australia.** c. 44.5 km direct N of Hypurna Homestead, Danggali Conservation Park, Sep 1980, *Conn 932* (AD); Great Australian Desert, 148 km N of Cook, Aug 1980, *Symon 12238* (CANB); c. 39.5 km direct N of Hypurna Homestead, Danggali Conservation Park, Sep 1980, *Toelken 6631 & Christensen* (AD). **New South Wales.** "Top Hut", NE of Mildura, Oct 1987, *Green s.n.* (NSW215901); 40 miles (64.4 km) N of Balranald, Oct 1970, *Mulham 396* (NSW); c. 1 mile (1.6 km) W of Timor Rock, near Coonabarabran, Jan 1962, *Salasoo 2253* (NSW). **Victoria.** Hattah Lakes NP, Sep 1969, *Anderson s.n.* (MEL694357); Kulkyn NP, Oct 1948, *Beaglehole ACB1035* (MEL).

Distribution and habitat: *Poranthera leiosperma* is recorded from across southern Australia with scattered occurrences near Southern Cross, Western Australia, eastwards through southern Northern Territory, South Australia, north-western Victoria to near Coonabarabran in western New South Wales. It is recorded as growing in open shrubland and mallee communities frequently with *Triodia* spp. in the understorey in red sandy soils. **Map 9.**

Phenology: Flowers and fruits have been collected in January and from July to November.

Affinities: *Poranthera leiosperma* is most closely related to *P. microphylla* with which it shares many attributes. However, it differs from that by having seeds with a smooth rather than tuberculate surface, longer leaves (11–15 mm long as compared with 6–11 mm long) and longer stipules (1.3–1.6 mm long as compared with 0.8–1.3 mm long). *Poranthera leiosperma* also differs from *P. microphylla* in its slightly more robust growth habit.

Etymology: The specific epithet is derived from Greek, *leio-*, smooth, and *spermus*, seed, and

refers to the smooth seed coat in this species which contrasts with that in the majority of *Poranthera* species which is variously ornamented.

10. *Poranthera microphylla* Brongn., *Ann. Sci. Nat. (Paris)* 29: 385 (1833); *Poranthera microphylla* Brongn. var. *microphylla*, Müll.Arg. in A.DC., *Prodr.* 15(2): 193 (1866); *Poranthera microphylla* var. *genuina* Müll.Arg. in A.DC., *Prodr.* 15(2): 193 (1866), *nom. inval.* **Type:** [Australia.] Port Jackson, *s.d.*, [*L.A.*] *Lesson s.n.* (lecto, here chosen: P152754 (ex herb. Brongn.); isolecto: P152755).

Poranthera microphylla var. *diffusa* Müll.Arg. in A.DC., *Prodr.* 15(2): 193 (1866). **Type:** [Australia.] New Holland, *s.d.* [without collector] (holo: G-DC *n.v.* (microfiche IDC 800-73.2453: II. 7)).

Poranthera microphylla var. *glauca* Müll.Arg. in A.DC., *Prodr.* 15(2): 193 (1866). **Type:** [Australia. New South Wales.] New Holland, in 1816, [without collector] (syn: G-DC *n.v.* (microfiche 800-73.2453. II. 6); syn: B *n.v.* (? destroyed)).

Poranthera microphylla var. *diffusa* Ewart, *Fl. Victoria* 721 (1930), *nom. illeg.* **Type:** unknown; no material cited.

Illustrations: Grüning (1913: 17, fig. 4F-G), as *Poranthera microphylla* var. *intermedia*; Cunningham *et al.* (1982: 464); James & Harden (1990: 394); Wheeler (1992: 627, fig. 192A); Kenneally *et al.* (1996: 106); Kirkpatrick (1997: fig. 49f); Corrick & Fuhrer (2000: 82).

Monoecious, diffuse or compact annuals or rarely perennials, to 30 cm high. Stems much branched at base then sparingly branched distally; branchlets ascending to erect, $\pm$ smooth, glabrous, 1.5–2 mm across, with leaf scars obscure. Leaves sessile or shortly petiolate, alternate, subopposite or opposite, widely spaced along branchlets; stipules white, narrow-ovate, 0.8–1.3 mm long, entire; petioles where present up to 1.5 mm long; laminae narrow-oblongate to obovate, spatulate or ovate, 6–11 mm long, 1–4 mm wide, flat with margins slightly recurved, smooth and glabrous

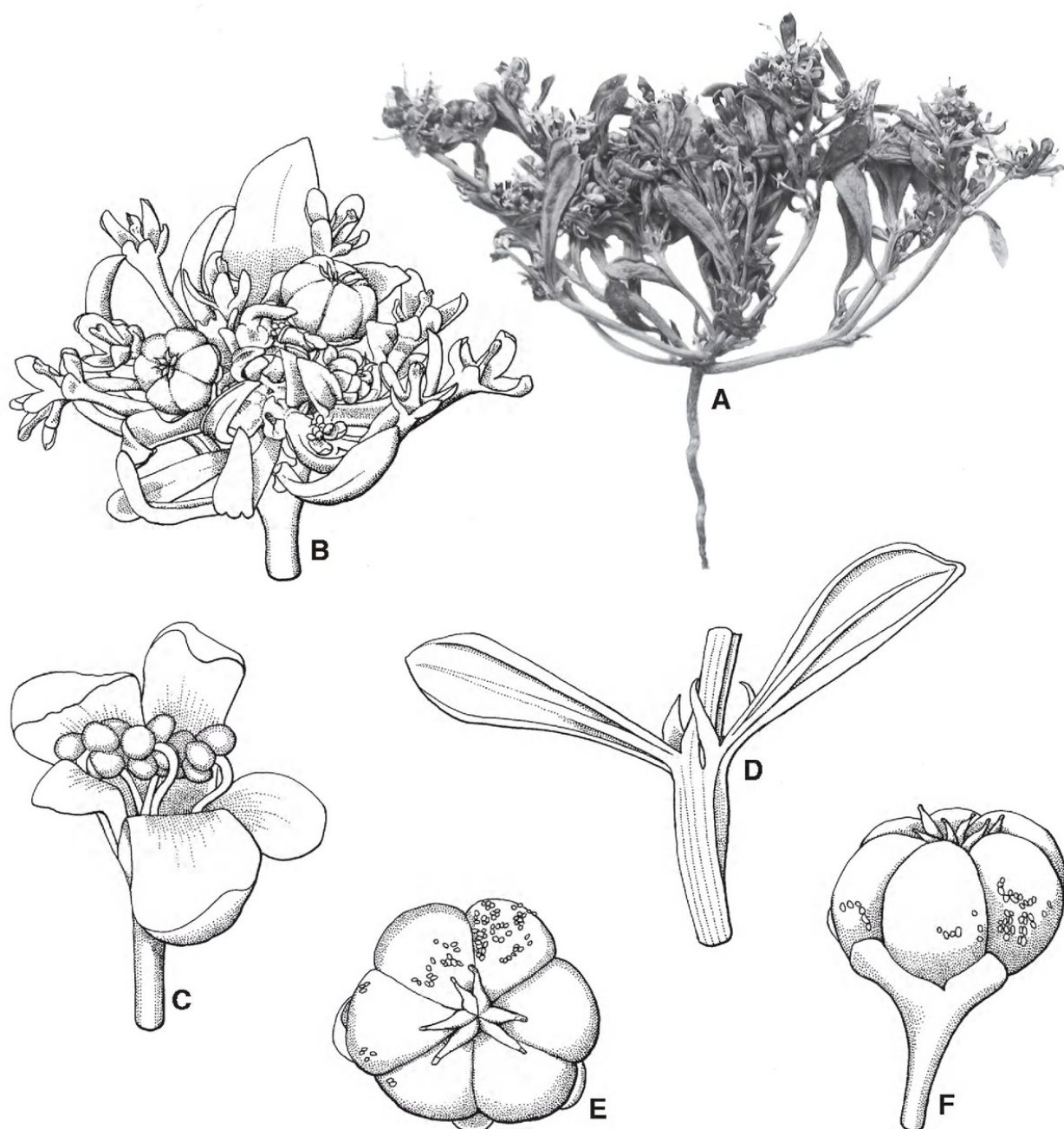


Fig. 3. *Poranthera leiosperma*. A. whole plant $\times 1.5$. B. inflorescence $\times 6$. C. male flower $\times 32$. D. branchlet with leaves and stipules $\times 6$. E. fruit from above $\times 16$. F. fruit from side $\times 16$. A-F from *George 8098* (PERTH). Del. W. Smith.

adaxially and abaxially, discolorous; midrib obscure adaxially, prominent abaxially; base attenuate or cuneate; apex obtuse to rounded, usually shortly apiculate. Flowers in short dense terminal racemes; racemes solitary; peduncles up to 20 mm long; rachis up to 5 mm long; bracts narrow-obovate, 3–4 mm long, 0.5–0.7 mm wide, obtuse. Male flowers with pedicels 0.5–1.5 mm long; calyx lobes 5, white or pink, obovate or oblong, 0.4–1.5 mm long, 0.2–0.8 mm wide, $\pm$

concavo-convex, rounded or obtuse at apex; petals 5, mostly white, pink or sometimes pale mauve, erect, oblanceolate or linear, 0.2–0.6 mm long, 0.1–0.3 mm wide, obtuse, with margins erose; glands clavate or obdeltate, 0.1–0.4 mm wide; stamens 5; filaments 0.3–0.9 mm long; anthers up to 0.1 mm long; rudimentary ovary a hemispherical dome or 3-lobed; lobes clavate, 0.1–0.4 mm long. Female flowers with pedicels 0.2–1 mm long, extending to 9 mm long in fruit;

calyx lobes 5, white or pale pink with greenish band along midline, oblong-elliptic, 0.5–1.5 mm long, 0.2–0.8 mm wide, flat or slightly concavo-convex distally, obtuse at apex; petals 5, white, linear-oblongate or narrow-obtrullate, 0.1–0.5 mm long, 0.1–0.3 mm wide, acute to obtuse, with margins minutely erose; ovary depressed globose, 0.4–1.1 mm across, shallowly to deeply 6-lobed, flat to slightly emarginate distally, smooth or papillose; styles each 0.2–0.7 mm long, deeply 2-partite, slender or rarely stout. Capsules depressed globose, 1.4–2.5 mm across, 0.6–1.4 mm long, prominently 6-lobed, slightly emarginate distally, slightly rugose. Seeds wedge-shaped, 0.4–1.1 mm long, 0.4–0.9 mm wide, 0.3–0.9 mm across; testa tuberculate, white.

Selected specimens (from 600 examined): **Western Australia.** Hill River crossing on Brand Hwy, c. 6 km N of Badgingarra, Sep 1988, *Henderson H3135* (BRI); Peak Eleanor, Peak Charles NP, c. 45 km W of Salmon Gums, Nov 1979, *Newbey 6406* (PERTH); Cape Arid NP, E of Esperance, Dec 1971, *Royce 10149* (PERTH). **Northern Territory.** c. 15 km N of Borroloola on Bing Bong Homestead road, Jun 1976, *Craven 4243* (CANB); 105 km from Borroloola on Wollgorang road, May 1987, *Craven 8529 et al.* (CANB); Parakeelya swamp, 50 km SW of Nathan River Homestead, Aug 1985, *Latz 10203* (DNA). **South Australia.** Hambidge Flora and Fauna Reserve, Oct 1966, *Alcock 1138* (BRI, CANB); c. 5 km E along Casterton Road from the Nangwarry to Penola road, Oct 1989, *Henderson & Turpin H3312* (AD, BRI); near Comaum, c. 20 km E of Penola, Sep 1962, *Hunt 1170* (AD). **Queensland.** COOK DISTRICT: Tinaroo Creek forestry road, 8.2 km past Henry Hannan Drive towards Mt Haig, Apr 1989, *Henderson & Clarkson H3218* (BRI). DARLING DOWNS DISTRICT: Girraween NP, 4.5 km ESE of Park Headquarters, Bald Rock Creek, Jan 1993, *Halford Q1593 et al.* (BRI, MEL). MORETON DISTRICT: Old Logan Road, Camira, Apr 1992, *Sharpe 5310 & Bird* (BRI, MEL). **New South Wales.** c. 22 km NE of Emmaville on Amaroo road, Oct 1993, *Coveny 16652 & Whalen* (BRI, NSW); Tantawangalo State Forest, 12 km S of Tantawangalo, Apr 1993, *Crawford 2254* (CANB, MEL, NSW); on Wollar/Bylong road, c. 30 km SW of Merriwa, Sep 1990, *Henderson & Turpin H3409* (BRI). **Australian Capital Territory.** Mt Loch, Feb 1983, *Beardsell s.n.* (MEL 1562983); Mt Franklin, Brindabella Range, Mar 1957, *Pullen 73* (CANB). **Victoria.** Mt Samaria Road, c. 65 km NW of Bridge Creek township, Nov 1996, *Clarke 2753* (MEL); c. 6 km SE of Taggerty, Cathedral Range, Neds Gully camping area, Nov 1996, *Clarke 2726* (MEL); Gippsland Plains, Briagolong Forest Reserve, 500 m S of Cemetery Road and 300 m E of Briagolong-Stratford Road, Oct 1991, *Lunt 91/84* (MEL). **Tasmania.** Flinders Island, Strzelecki NP, 1.4 km SW of Strzelecki Peaks, Dec 1988, *Crawford 1136* (BRI, CANB); Wombat Moor, Jan 1948, *Curtis s.n.* (HO 6359); N of

Bessells Road, Sale Rivulet, Dec 1983, *Patacsek s.n.* (HO72814); Mt Field National Park, Mt Field West, Feb 1969, *Telford EMC2227* (CANB).

Distribution and habitat: *Poranthera microphylla* is widespread and is recorded in all Australian states though it is not found in the more arid regions of Australia. It also occurs in New Zealand. It is recorded as growing in a wide variety of habitats from coastal dunes to alpine mountain slopes in grassland, heathland, woodland and open forest communities on a range of substrates. **Map 10.**

Phenology: Flowers and fruits have been collected throughout the year.

Typification: In his protologue of *P. microphylla*, Brongniart cited two collections, namely “in Nova-Hollandia In Montibus Caeruleis near Port-Jackson (Lesson)” and “ad fretum Entrecasteaux (Vog. de Baudin, in herb. Mus. Par.)”. Two sheets of the Lesson collection and one sheet of the Baudin collection have been located amongst material on loan to BRI from P, and are numbered 152754, 152755 and 152753 respectively. The Lesson specimen 152754 is selected here as lectotype of *Poranthera microphylla* as it is part of the original material, agrees with the protologue description and is more than likely the material illustrated in the protologue.

Notes: *Poranthera microphylla* displays a large degree of morphological variation. However, the variants are not considered sufficiently distinct enough to warrant formal recognition here. In general, those plants from populations in the Kimberley in Western Australia, central Northern Territory and the Cook District in northern Queensland have more or less erect stems, linear leaves and generally comparatively smaller flowers, fruits and seeds than those of other forms; plants from south-western Western Australia and South Australia have a procumbent to erect habit and leaves narrow-obovate with a cuneate base; plants in eastern Australia, from north-eastern Queensland to Tasmania, generally have a sprawling to weakly ascending habit and spatulate leaves with an attenuate base.

There is also a high-altitude form in the Australian Alps and in the higher altitudes in

Tasmania which resembles *P. oreophila* and *P. petalifera* in having opposite leaves with more or less strongly revolute leaf margins and stout style branches. Some specimens of *P. microphylla* seem to possess a perennial rootstock (e.g. *Pullen 73* (CANB), *Beardsell s.n.* (MEL 1562983) and *Telford EMC2227* (CANB)). This form of *P. microphylla* differs from the other mentioned species by having monoecious rather than dioecious plants. It also differs from *P. oreophila* in having tuberculate rather than smooth seeds and from *P. petalifera* in having its flowers in terminal umbel-like racemes rather than being solitary in leaf axils.

11. *Poranthera obovata* Halford & R.J.F.Hend., **sp. nov.** ut videtur maxime arcte affinis *P. ericifoliae* Rudge sed foliis angustis obovatis vice linearibus usque angustis oblanceolatis, marginibus foliorum leviter recurvatis vice valide recurvatis usque revolutis et stipulis integris vice laciniatis distinguenda. **Typus:** Queensland. MORETON DISTRICT: Helidon Hills, c. 10 km N of Helidon township, 7 Sep 1989, *R.J.F. Henderson H3231* (holo: BRI; iso: MEL, NSW, distribuendi).

Poranthera sp. (Beerwah D.Hassall DH7431), P.I. Forster & D.A. Halford (2002, p.73).

Monoecious, spreading to erect, herbaceous perennials to 20 cm high. Stems unbranched or sparingly branched; branchlets ascending to erect or rarely procumbent, smooth or papillose, glabrous, 1.5–2 mm across, with leaf scars prominent. Leaves sessile, alternate, crowded along branchlets; stipules white, narrow-ovate or narrow-triangular, 1.5–2 mm long, entire; laminae narrow-obovate, 10–15 mm long, 1.5–3 mm wide, flat with margins slightly recurved, smooth and glabrous adaxially and abaxially, discolorous; midrib impressed proximally adaxially, prominent abaxially; base attenuate; apex obtuse. Flowers in short dense terminal racemes; racemes solitary or rarely several in a leafy terminal corymb; peduncles 10–25 mm long; rachis 2–30 mm long; bracts narrow-obovate, 2–7 mm long, 0.5–1.3 mm wide, obtuse to rounded. Male flowers with pedicels 1.5–2.5 mm long; calyx lobes 5, white to pink or rarely with pale blue hue, obovate, 1.6–1.7 mm long, 0.5–0.7 mm wide, slightly concavo-convex,

rounded at apex; petals 5, white or pale pink, erect, recurved distally, terete proximally, c. 0.5 mm long, to c. 0.1 mm across, acute, with margins entire; glands 2-lobed, 0.2–0.3 mm wide; stamens 5; filaments 1.4–1.5 mm long, slightly incurved; anthers 0.2–0.3 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.5–0.6 mm long. Female flowers with pedicels 1.5–2 mm long, extending to c. 6 mm in fruit; calyx lobes 5, white to pink, oblong, 1.3–2.8 mm long, 0.6–0.7 mm wide, slightly concavo-convex, rounded at apex; petals 5 or sometimes absent, white or pink, subulate, 0.4–0.6 mm long, 0.1–0.2 mm wide, acute, with margins entire; ovary depressed globose, 1–1.8 mm across, deeply 6-lobed, emarginate distally, papillose; styles each c. 1 mm long, deeply 2-partite, slender. Capsules depressed globose, 2.8–3 mm across, 1.7–2 mm long; prominently 6-lobed distally, emarginate distally, papillose. Seeds wedge-shaped, 1.1–1.2 mm long, c. 2 mm wide, c. 2 mm across; testa reticulate-foveate with fovea white and ridges pale brown and translucent. **Fig. 4.**

Selected specimens (from 30 examined): **Queensland.** PORT CURTIS DISTRICT: Kroombit Tops, State Forest 316, 48 km E of Biloela, Sep 1988, *Gibson TOI430* (BRI). LEICHHARDT DISTRICT: Blackdown Tableland, c. 35 km SE of Blackwater, Sep 1971, *Henderson H967 et al.* (BRI, MEL); Mimosa Creek, Blackdown Tableland, Sep 1974, *Williams 74054* (BRI). WIDE BAY DISTRICT: Oakey Creek road, Blackall Range, Oct 1990, *Sharpe 4977 & Bean* (BRI). MORETON DISTRICT: State Forest 893 Mt Mee, Aug 1995, *Forster PIF17391 & Leiper* (BRI, MEL, NSW); near Forestry Station, Beerwah, Jun 1974, *Hassall DH7431* (BRI); Mapleton Forestry Scenic Drive, c. 5 km N of Mapleton, Nov 1987, *Sharpe 4751 & Guymmer* (BRI); Lockyer State Forest (SF616), Nov 1994, *Thompson & Bean MOR453* (BRI); at foot of Mount Beerburum, Sep 1959, *Thurlow s.n.* (BRI [AQ205075]). **New South Wales.** 8 km NNW of Glenreagh, Oct 1990, *Bean 2453* (BRI); 7 km NNW of Glenreagh, Oct 1990, *Bean 2462* (BRI, CANB, K, MEL, NSW); Rocky Creek, 28 km from Grafton towards Coaldale, Feb 1995, *Bean 8357* (BRI, NSW).

Distribution and habitat: *Poranthera obovata* occurs in eastern Australia from the Blackdown Tableland near Blackwater in central Queensland southwards to Glenreagh in northern New South Wales. It is recorded as growing in heath, open eucalypt woodland or forest communities in either shallow sandy soils usually overlying sandstone or gravelly sandy clays. **Map 11.**

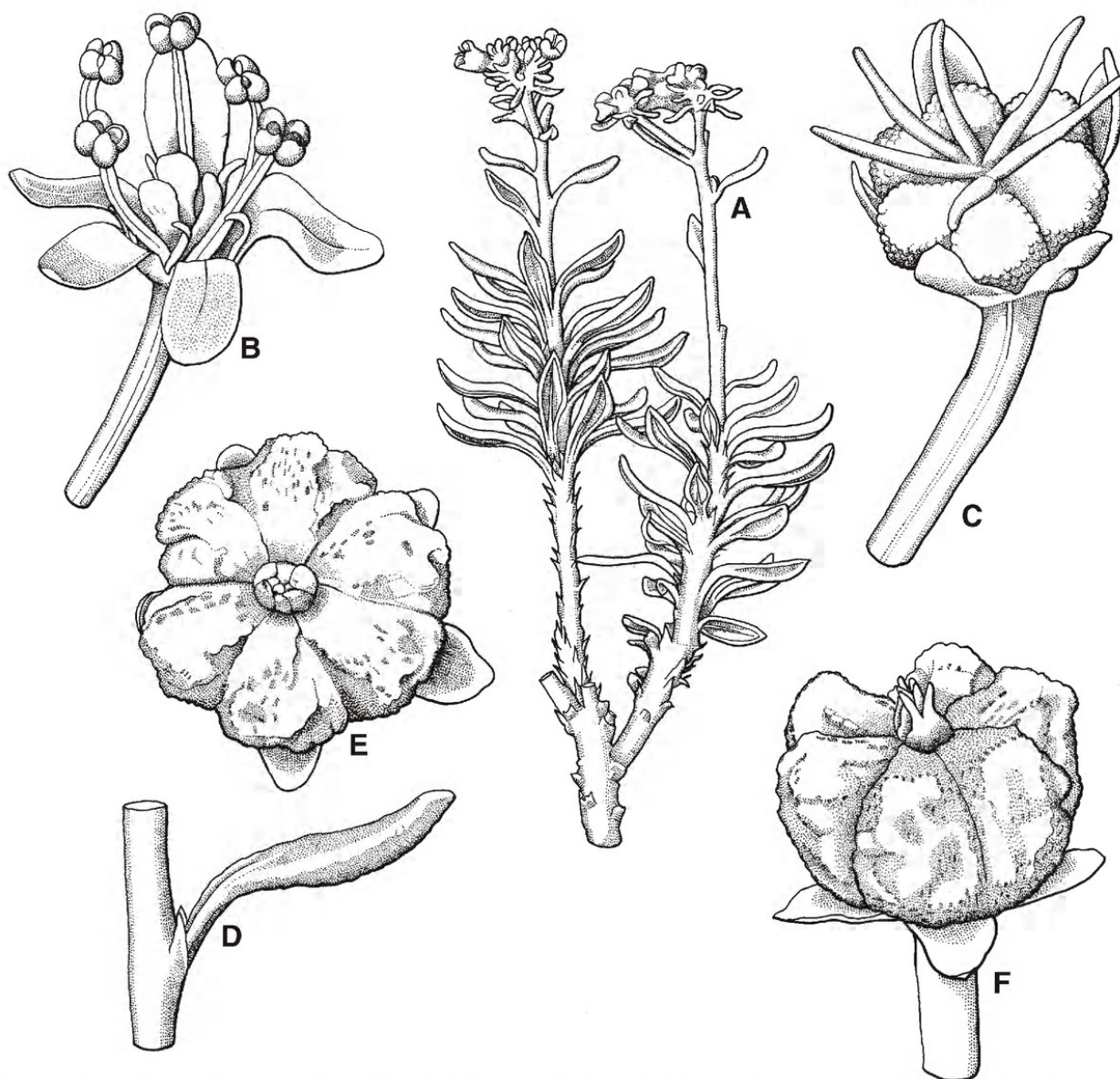


Fig. 4. *Poranthera obovata*. A. branchlet with flowers $\times 2$. B. male flower $\times 16$. C. female flower $\times 16$. D. branchlet with leaf and stipules $\times 8$. E. fruit from above $\times 12$. F. fruit from side $\times 12$. A, D from *Sharpe 4977 & Bean* (BRI); B, C, E, F from *Henderson H3588* (BRI). Del. W. Smith.

Phenology: Flowers have been collected in February, April, June and from August to December, fruits in February, April, June, September, October and December.

Affinities: *Poranthera obovata* seems most closely related to *P. ericifolia* but is distinguished from that by its narrow-obovate rather than linear to narrow-oblongate leaves, slightly recurved rather than strongly recurved to revolute leaf margins and entire rather than lacinate stipules.

Etymology: The specific epithet is derived from Latin, *obovatus*, obovate, in reference to the shape of the species' leaves.

12. *Poranthera oreophila* Halford & R.J.F.Hend., **sp. nov.** olim *P. microphylla* Brongn. confusa sed plantis dioeciis, seminibus testa laevi et pallide brunnea distinguenda. *P. oreophila* ut videtur maxime arcte affinis *P. petaliferae* (Orchard & J.B.Davies) Halford & R.J.F.Hend. autem floribus in racemis terminalibus dispositis et floribus masculis plerumque minoribus distinguenda. **Typus:** New South Wales. Kosciusko N.P., Gurrangorambla Range, Mount Morgan, 12 Jan 1994, *A.E. Jenkinson 3 & D.K. Judge* (holo: CANB; iso: BRI, MEL, NSW).

Dioecious, compact herbaceous perennials to 30 cm high. Stems sparingly branched; branchlets annual, prostrate or weakly ascending, $\pm$ smooth, glabrous; 0.7–1.1 mm across, with leaf scars obscure. Leaves sessile or shortly petiolate, opposite, widely spaced along branchlets; petioles 0.2–0.5 mm long; stipules white, narrow-triangular, 0.5–1 mm long, entire; laminae narrow-ovate, narrow-obovate or narrow-elliptic, 4.3–6.5 mm long, 1.8–3.8 mm wide, flat or rounded with margins recurved to revolute, smooth and glabrous adaxially and abaxially, discolourous; midrib impressed proximally adaxially, slightly raised proximally abaxially; base attenuate; apex acute to obtuse. Flowers in short dense terminal racemes; racemes solitary; peduncles 5–10 mm long; rachis 2–4 mm long; bracts narrow-obovate, 1.1–2 mm long, 0.5–1.1 mm wide, obtuse. Male flowers with pedicels 0.5–0.7 mm long; calyx lobes 5, white, obovate or oblong, 0.9–1.1 mm long, 0.5–0.9 mm wide, $\pm$ flat; rounded at apex; petals 5, white, erect, recurved distally, oblanceolate, 0.4–0.5 mm long, 0.1–0.2 mm wide, acute, with margins $\pm$ entire; glands 2-lobed or subglobose, 0.2–0.4 mm wide; stamens 5; filaments 0.5–0.9 mm long, $\pm$ straight; anthers *c.* 0.1 mm long; rudimentary ovary 3-lobed, lobes clavate, 0.2–0.3 mm long. Female flowers with pedicels up to 1.1 mm long, extending to 7 mm long in fruit; calyx lobes 5, white sometimes with mauve tinge, oblong to oblong-obovate, 1.1–1.2 mm long, 0.8–0.9 mm wide, flat, rounded at apex; petals 5, white, linear-oblanceolate, 0.2–0.6 mm long, 0.1–0.2 mm wide, acute, with margins entire; ovary depressed globose, 1–1.3 mm across, shallowly 6-lobed, emarginate distally, smooth or papillose; styles each 0.5–0.6 mm long, deeply 2-partite, stout. Capsules depressed globose, 1.7–2.2 mm across, 1.2–1.4 mm long, shallowly 3-lobed, emarginate distally, $\pm$ smooth. Seeds wedge-shaped, 0.9–1 mm long, 0.6–0.7 mm wide, 0.8–0.9 mm across; testa smooth, pale brown or white. **Fig. 5.**

Selected specimens (from 40 examined): **New South Wales.** Kiandra, 0.5 miles (*c.* 0.8 km) SW of road junction, Feb 1969, *Briggs 2523* (NSW); Kosciusko N.P., 2 miles (*c.* 3.2 km) from Grey Mare Track junction with Happy Jacks Road, toward Happy Jacks Pondage, Jan 1966, *Carroll 150A* (CANB); Jindabyne, Mar 1907, *Hallman s.n.* (NSW455328); Grey Mare

Range, *c.* 2.4 km SW of Grey Mare Hut, Feb 1968, *Rodd 712* (NSW); Rule's Point N of Kiandra, Jan 1969, *Salasoo 3503* (NSW); Kosciusko NP, Little Peppercorn Plain, Feb 1981, *Taylor 1309 et al.* (CANB); Snowy River between Guthega Dam and Spencers Creek, Jan 1971, *Thompson 1008* (NSW); Cooleman Plain, Dec 1962, *Walker ANU952* (CANB). **Australian Capital Territory.** between Mt Gingera and Blackfellows Gap, May 1959, *Burbidge 6398 & Gray* (CANB); Mt Gingera, Feb 1953, *Moore 2323* (CANB); east slope of Mt Gingera, Brindabella Range, Nov 1966, *Schodde 5159* (CANB, K, NSW). **Victoria.** Bogong High Plains, Wilkinson Memorial Lodge area, Jan 1966, *Beaulehole ACB15421* (MEL, NSW); near Cope Hut, Bogong High Plains, Feb 1972, *Craven 2184* (CANB); Bogong High Plains, Nelse Track, Jan 1982, *Forbes 774 & van Rees* (MEL); Bogong NP, footslopes of Mt Nelse beside track, Feb 1985, *Norris 302* (NSW); Digges' Holes, Nunniong Plateau, Jan 1949, *Wakefield 2665* (MEL); Mt Cobberas, Feb 1974, *Willis s.n.* (MEL2062983); Cobberas Mountains, between No. 1 summit and Asses Ears, Feb 1975, *Willis s.n.* (MEL2062982).

Distribution and habitat: *Poranthera oreophila* occurs in alpine areas of south-eastern Australia from the Brindabella Range in the Australian Capital Territory, through Kosciusko National Park, New South Wales, to Nunniong Tableland and Bogong High Plains, Victoria. It is recorded as growing mostly in stony clay loam soils in alpine tussock grassland and herbfield communities, at altitudes higher than 1300 metres. **Map 12.**

Phenology: Flowers and fruits have been collected from November to May.

Affinities: *Poranthera oreophila* has been identified as *P. microphylla* in the past but can be distinguished from that species by being dioecious and having smooth light brown seeds. *Poranthera oreophila* seems most closely related to *P. petalifera* but can be distinguished from that by having its flowers in terminal racemes and its generally smaller male flowers. *Poranthera oreophila* is similar to the New Zealand endemic *P. alpina* but can be distinguished from that by having its flowers in short dense terminal racemes, both the male and female flowers possessing petals and male flowers with a vestigial ovary.

Etymology: The specific epithet is derived from Greek, *oreo-*, mountain, and *philus*, loving, in reference to the species' habitat.

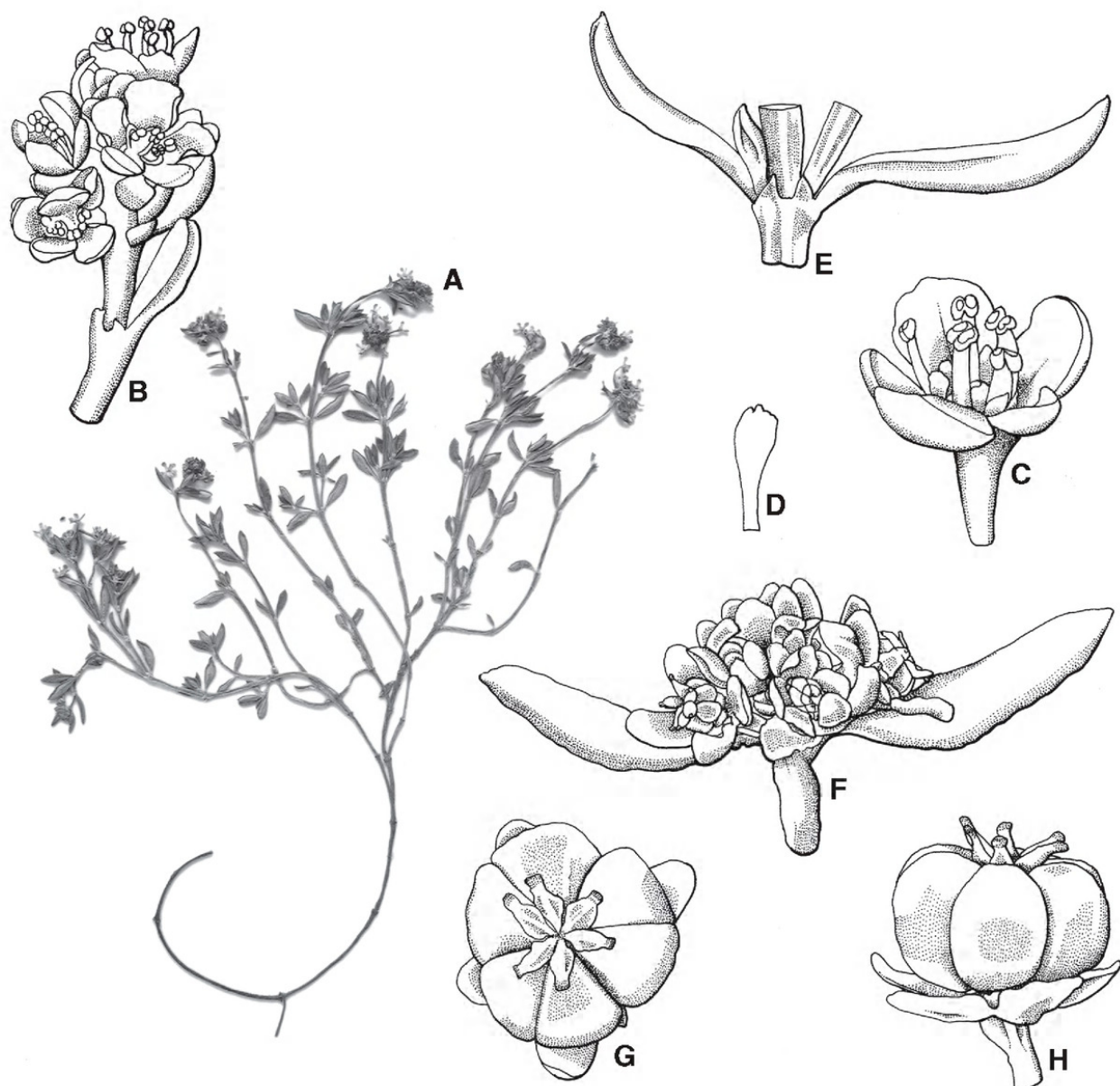


Fig. 5. *Poranthera oreophila*. A. branchlet with flowers and fruit $\times 0.8$. B. inflorescence of male flowers $\times 8$. C. male flower $\times 16$. D. petal from male flower $\times 32$. E. branchlet with leaves and stipules $\times 6$. F. inflorescence of female flowers $\times 8$. G. fruit from above $\times 12$. H. fruit from side $\times 12$. A from Moore 2323 (CANB); B–E from Forbes 774 & van Rees (MEL); F–H from Briggs 2523 (NSW). Del. W. Smith.

13. *Poranthera petalifera* (Orchard & J.B.Davies) Halford & R.J.F.Hend., **comb. nov.**, *Oreoporanthera petalifera* Orchard & J.B.Davies, *Pap. & Proc. Roy. Soc. Tasmania* 119: 62/63 (1985). **Type:** Tasmania. NE ridge of Mt Anne, 31 Dec 1984, J.B. Davies 31 (holo: HO *n.v.*; iso: CHR *n.v.*, MEL).

Illustrations: Orchard & Davies (1985: fig. 1), as *Oreoporanthera petalifera*; J. Kirkpatrick (1997: fig. 45c), as *Oreoporanthera petalifera*.

Dioecious, compacted herbaceous perennials to 30 cm high and to 20 cm across. Stems much branched; branchlets decumbent, smooth, glabrous, 0.6–0.9 mm across, with leaf scars obscure. Leaves shortly petiolate, opposite, crowded or widely spaced along branchlets; petioles up to 1 mm long; stipules white, narrow-triangular, 0.8–1.2 mm long, entire; laminae lanceolate or narrow-obovate, 3.5–7.1 mm long, 0.8–1.7 mm wide, rounded with margins strongly revolute to midrib, smooth and glabrous adaxially and abaxially, discolorous; midrib obscure adaxially, slightly raised proximally

abaxially; base attenuate; apex acute. Flowers solitary in upper leaf axils. Male flowers with pedicels 0.9–2.6 mm long; calyx lobes 5, white, oblong or obovate, 1.1–2 mm long, 0.6–0.8 mm wide, $\pm$ flat, rounded at apex; petals 5, white, erect, incurved distally, oblanceolate, 0.6–0.7 mm long, 0.1–0.2 mm wide, acute, with margins entire; glands subglobose, 0.3–0.4 mm wide; stamens 5; filaments 0.8–1.2 mm long, incurved; anthers 0.3–0.4 mm long; rudimentary ovary 3-lobed; lobes clavate, 0.2–0.3 mm long. Female flowers with pedicels up to 1 mm long, extending to *c.* 4 mm in fruit; calyx lobes 5, white, oblong to oblong-obovate, 0.9–2.2 mm long, 0.6–0.9 mm wide, slightly concavo-convex, rounded at apex; petals 5, white, linear-oblanceolate or narrow-ovate, 0.2–0.6 mm long, 0.1–0.3 mm wide, acute or obtuse, with margins $\pm$ entire; ovary globose, *c.* 0.6 mm across, shallowly 6-lobed, flat distally, smooth; styles each *c.* 0.2 mm long, 2-partite, stout. Capsules depressed globose, *c.* 2 mm across, *c.* 1.2 mm long, shallowly 3-lobed, emarginate distally, smooth. Seeds subglobose, 0.8–0.9 mm long, 0.7–0.8 mm across; testa faintly tuberculate, white or orange brown.

Additional specimens examined: **Tasmania.** NE ridge of Mount Anne, Jun 1984, *Buchanan & Davies* 3725 (HO); *loc. cit.*, Dec 1984, *Buchanan* 5101, 5102, 5103, 5116, 5117, 5119 (HO); Mt Anne, Feb 1989, *Croft* 10176 & *Richardson* (CANB).

Distribution and habitat: *Poranthera petalifera* is confined to Mount Anne in south-western Tasmania, occurring at altitudes from 800 to 1000 m above sea level. It is recorded as growing in crevices of exposed dolomite rocks in dwarf subalpine rainforest. **Map 13.**

Phenology: Flowers have been collected in December and February, fruits in June.

Affinities: *Poranthera petalifera* seems most closely related to *P. oreophila* and the New Zealand endemic *P. alpina*. It can be distinguished from the former by having its flowers borne singly in the axils of the upper leaves and generally by the larger male flowers. For comments on the distinguishing features of *P. petalifera* from *P. alpina*, see Orchard & Davies (1985).

14. *Poranthera triandra* J.M.Black, *Trans. & Proc. Roy. Soc. South Australia* 40: 66–67, t.7 (1916). **Type:** [South Australia.] Yeelanna, Nov 1915, *T.G.B. Osborn s.n.* (holo: AD977512A; iso: AD9775128B, K).

Illustration: Weber (1986: 764, fig. 408).

Monoecious, compact annuals to 3 cm high. Stems much branched; branchlets procumbent or erect, smooth, glabrous, up to 0.5 mm across, with leaf scars obscure. Leaves $\pm$ sessile, alternate or opposite, widely spaced along branchlets; stipules white sometimes with red-brown striations, narrow-triangular, 0.5–1 mm long, entire; laminae narrow-obovate to obovate or narrow-elliptic to elliptic, 2–5.5 mm long, 0.9–2.2 mm wide, flat, smooth and glabrous adaxially and abaxially, concolorous; midrib obscure adaxially, slightly raised proximally abaxially; base attenuate; apex obtuse to rounded. Flowers in short dense terminal umbel-like racemes; racemes solitary or several in a leafy terminal corymb; peduncles 5–10 mm long; rachis 1–2 mm long; bracts narrow-obovate, 1–1.5 mm long, 0.4–0.5 mm wide, obtuse to rounded. Male flowers with pedicels 0.3–0.6 mm long; calyx lobes 3 (rarely 4 or 5), pink sometimes with reddish striations, oblong or broadly ovate, 0.4–0.5 mm long, 0.1–0.5 mm wide, concavo-convex, rounded at apex; petals 3, white, erect, ovate, 0.1–0.5 mm long, up to 0.2 mm wide, obtuse to rounded, with margins entire; glands obscure; stamens 3; filaments 0.2–0.3 mm long, straight; anthers up to 0.1 mm long; rudimentary ovary minute, hemispherical. Female flowers with pedicels *c.* 0.3 mm long, extending to *c.* 3 mm long in fruit; calyx lobes 3 (rarely 4 or 5), white with red-brown striations, oblong-elliptic or ovate, 0.5–0.6 mm long, 0.2–0.5 mm wide, slightly concavo-convex, obtuse or sometimes acute at apex; petals absent or 3, when present white, subulate, *c.* 0.3 mm long, *c.* 0.05 mm wide, acute, with margins entire; ovary depressed globose, 0.5–0.9 mm across, deeply 6-lobed, emarginate distally, smooth or slightly papillose; styles each 0.1–0.2 (–0.4) mm long, shortly divided distally or rarely 2-partite, stout or rarely slender. Capsules depressed globose, 0.9–1.3 mm across, 0.5–0.8 mm long, prominently 6-lobed, emarginate distally, smooth or papillose. Seeds wedge-shaped, 0.4–0.6 mm long, 0.3–0.4 mm wide, 0.3–0.4 mm across; testa granulate, white or pale brown with white protuberances.

Selected specimens (from 20 examined): **Western Australia.** Eucla, in 1889, *Batt s.n.* (MEL2065675, 2065674); 4.7 km S of Sunrise Hill road, east boundary of reserve 33113, Oct 1984, *Burgman* 4485 (PERTH); 21.7 km due SSE of Peak Eleanor, Sep 1984, *Burgman* 3599B (PERTH); Parker Range, in 1890, *Merrall s.n.*

(MEL2065535); Jimberlana Hill, 9 km NE of Norseman, Aug 1980, *Newbey 7194* (PERTH); Middle Island, Recherche Archipelago, Nov 1973, *Weston 8760* & *Trudgen* (PERTH); Middle Island, Recherche Archipelago, Nov 1950, *Willis s.n.* (MEL2063002). **Northern Territory.** Reedy Creek Gorge, 4 miles (c. 6.4 km) E of Kings Canyon, George Gill Range, Oct 1966, *Beaglehole ACB20473B* (NSW); near Reedy Rockhole, George Gill Range, Jul 1981, *Thomson 86* (DNA). **South Australia.** Well E of Meningie, Oct 1965, *Beaglehole ACB14474* & *Williams* (AD, MEL, NSW); Monarto South, c. 15 km W of Murray Bridge, Nov 1945, *Cleland s.n.* (AD96005033); c. 60 km SE of Adelaide, Oct 1958, *Eichler 15061* (AD); S of Port Rickaby, Yorke Peninsula, Oct 1980, *Heyligers 80162* (CANB); Lucindale, c. 35 km W of Naracoorte, Nov 1934, *Ising s.n.* (AD97409341); near Murray Bridge, Sep 1973, *Smith 2414* (AD); c. 15 km W of Murray Bridge on Adelaide-Melbourne railway, Sep 1974, *Spooner 3573* (AD); Kangaroo Island, 1886, *Tepper s.n.* (MEL2065666). **Victoria.** Grampians, in 1892, *Walter s.n.* (MEL694310).

Distribution and habitat: *Poranthera triandra* occurs in scattered populations from near Esperance, Lake King and Eucla in Western Australia, Kangaroo Island, Yorke Peninsula and Murray Bridge in South Australia, George Gill Range in the Northern Territory, and the Grampians, Victoria. It is recorded as growing in open eucalypt woodland, low shrubland or open mallee communities in sandy or loamy sand soils. **Map 14.**

Phenology: Flowers and fruits have been collected from July to November

Notes: The Central Australia collections *Thomson 86* (DNA) and *Beaglehole ACB20473B* (NSW) are from populations somewhat isolated from the others of this species. These specimens differ from others of the species in having a colliculate rather than granulate seed surface and the calyx lobes of its female flowers are narrower than those observed in other collections. They also lack the reddish-brown marks that are prominent in other dried specimens of *P. triandra*. These specimens are tentatively included here within our concept of *P. triandra* but further collections and field studies are warranted to establish their correct identity.

Excluded Names

Poranthera microphylla* var. *procera Grüning in A. Engler, *Pflanzenr.* Heft 58: 18 (1913). **Type citation:** 'Western Australia. Swan River (Drummond without number in Herb. Berol.)' (holo: B (? destroyed)).

Type material appears non-existent rendering the correct placement of this name impossible for us at this stage. From the protologue description it is most probably a synonym of *Poranthera microphylla*.

Poranthera glauca Klotzsch in J.G.C. Lehmann, *Pl. Preiss.* 2: 231 (1848); *Poranthera ericoides* var. *glauca* (Klotzsch) Domin, *Vestn. Kral. Ceske Spolecn. Nauk. Tr. Mat.-Prir. (Mem. Soc. Roy. Sci. Boheme, Prague)* 1921/2(2): 58 (1923). **Type citation:** [Western Australia.] 'In arenosis ad fluvium Cygnorum J. Drummond a. 1839 Herb. Preiss. sine No.' (holo: ?).

We have been unable to locate any type material rendering the correct placement of this name impossible for us at this stage. From the protologue description it is most probably a synonym of *Poranthera huegelii*.

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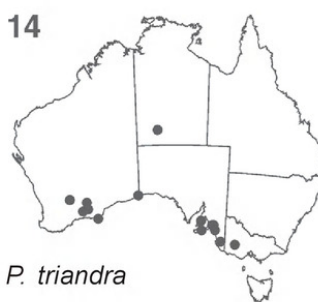
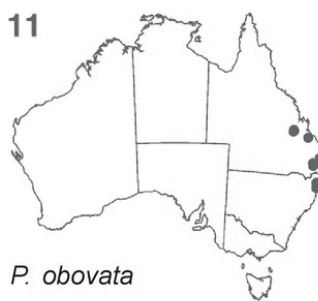
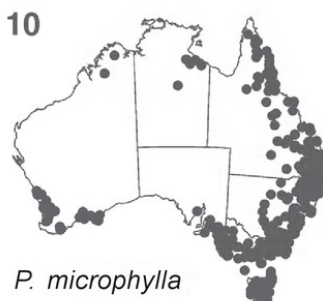
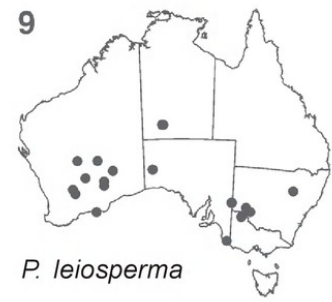
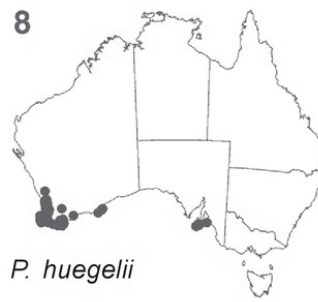
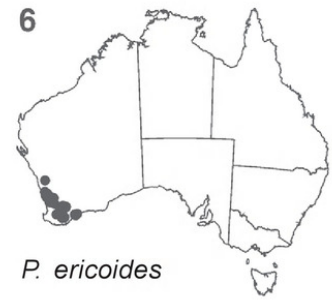
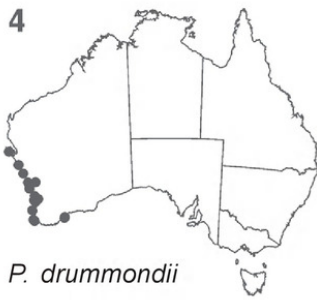
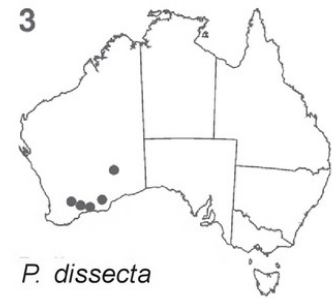
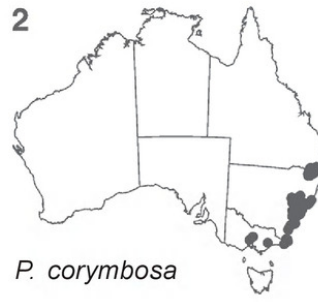
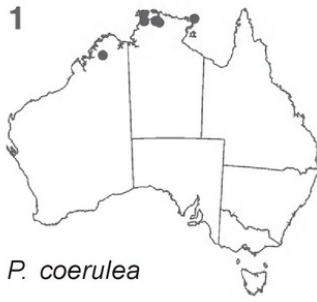
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