

New species of *Commersonia* J.R.Forst. & G.Forst. (Sterculiaceae) from eastern Australia and Vanuatu

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Summary

Guymer, G.P. (2005). New species of *Commersonia* J.R.Forst. & G.Forst. (Sterculiaceae) from eastern Australia and Vanuatu. *Austrobaileya* 7(1): 231–250. Ten new species of *Commersonia* are described: *Commersonia argentea*, *C. beeronensis*, *C. johnsonii*, *C. leiperi*, *C. pearanii*, *C. pedleyi*, *C. reticulata*, *C. rossii* and *C. viscidula* from eastern Australia, and *C. obliqua* from Vanuatu. The new combination *C. novoguineensis* (Gilli) Guymer is made based on *Disaster novoguineensis* Gilli. The new subgenus *Commersonia* subgenus *Verticillata* Guymer is described for the species with deeply 3-lobed petaloid staminodes: *C. fraseri*, *C. rossii*, *C. argentea*, *C. beeronensis* and *C. viscidula*. An epitype is selected for *C. bartramia*. All new taxa are described and most illustrated, with notes on distribution, habitat and conservation status. An identification key to the Queensland species of *Commersonia* is provided.

Key Words: Sterculiaceae, *Commersonia* subgenus *Verticillata*, *Commersonia argentea*, *Commersonia beeronensis*, *Commersonia johnsonii*, *Commersonia leiperi*, *Commersonia novoguineensis*, *Commersonia obliqua*, *Commersonia pearanii*, *Commersonia pedleyi*, *Commersonia reticulata*, *Commersonia rossii*, *Commersonia viscidula*, new species, new combination, taxonomy, Australia, Vanuatu, Papua New Guinea, Queensland

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Introduction

The genus *Commersonia* was described by J.R. Forster and G.A. Forster in *Characteres Generum* (Forster & Forster 1775) and was based on *C. echinata*, a species from Tahiti (Society Islands). However, George Forster in a letter to Christian Voss in 1792 indicated he was the author of the plant descriptions “He [J.R. Forster] had no part in the plant descriptions [for *Characteres Generum*]; I completed them all together with Sparrman, ...” (Hoare 1975: 170).

Commersonia is a genus of about 30 species occurring in south east Asia and the south west Pacific with the majority of its species occurring in Australia. The extra-Australian species include *Commersonia echinata* J.R.Forst. & G.Forst., endemic to Tahiti, *C. obliqua* described here from Vanuatu, *C. novoguineensis* (a new combination in this paper) from montane New Guinea and the widespread *C. bartramia* (L.) Merr. that ranges from China, throughout SE Asia, New Guinea, New Caledonia, Solomon Islands and Australia. The Australian species occur in Western

Australia, southern Northern Territory, South Australia, Victoria, New South Wales and Queensland.

The majority of new species described here have been previously recognised or newly discovered and are required for the forthcoming census of Queensland plants. The new species *C. pedleyi* described in this paper has a single staminode or a central and two lateral staminodes between each pair of stamens and its other characters are consistent with the species being positioned in *Commersonia*. The genus *Rulingia* R.Br. was described by Brown (1820) and distinguished from *Commersonia* by having a single staminode between each pair of stamens. The characters of the staminodes of *C. pedleyi* indicate that the genus *Rulingia* requires reassessment with respect to its relationship to *Commersonia*.

Materials and methods

This study is based upon the examination of herbarium material at BM, BRI, CANB, G, K, L, MEL, NSW and P, and for some species field collections and observations by the author. The

herbarium acronyms follow Holmgren *et al.* (1990). All specimens cited have been seen by the author. Bibliographic data are provided for a number of previously described species that some of the new taxa have been confused with in the past, *viz.* *C. bartramia*, *C. fraseri*, *C. leichhardtii*. The latter species is fully described and typified to enable application of the name. One species is resurrected from synonymy under another genus (*viz.* *C. novoguineensis*).

Measurements are sometimes abbreviated with $\times$ indicating length $\times$ width. Descriptions of the flowers were prepared from material preserved in spirit or reconstituted material. Common abbreviations in the specimen citations are L.A. (Logging Area), N.P. (National Park), S.F. (State Forest). The abbreviation *NCA* is for the *Queensland Nature Conservation Act 1992* and its associated regulations. The

conservation status of species is based on the criteria of the IUCN (2001).

Vegetation terminology for Queensland follows that of the *Vegetation Management Act 1999* and its associated regulations. The abbreviation RE refers to regional ecosystem and the regional ecosystem description database at www.epa.qld.gov.au/REDD.

Taxonomy

Commersonia J.R.Forst. & G.Forst., *Char. Gen.* 43 (1775). **Type:** *C. echinata* J.R.Forst. & G.Forst.

Disaster Gilli, *Ann. Naturhist. Mus. Wien* 83: 454–455 (1980). **Type:** *D. novoguineensis* Gilli

Distribution: About 30 species in Australia, SE Asia, Malesia and Melanesia.

Key to Queensland species of *Commersonia*

1. Flowers with deeply 3-lobed petaloid staminodes; capsules with 5 chartaceous wings 2–6 mm long (subg. *Verticillata*) 2
- Flowers with filiform lateral staminodes less than half as long as central staminode lobe or rarely only with one staminode between each pair of the stamens; capsules without chartaceous wings or with 5 short papery upper wings 1.5–2 mm long (*C. pedleyi*) (subg. *Commersonia*) 5
2. Leaves and inflorescences with mixture of red glandular hairs and stellate hairs. SE Qld & NE NSW 1. *C. viscidula*
- Leaves and inflorescences with predominantly stellate hairs 3
3. Leaves glaucous above. Central Qld 2. *C. argentea*
- Leaves green above 4
4. Branchlets, leaves and inflorescences with golden brown indumentum; petals 4.5–4.8 mm long; ovules 6 per loculus. SE Qld 3. *C. beeronensis*
- Branchlets, leaves and inflorescences with cream or pale brown indumentum; petals 5–5.5 mm long; ovules 8 per loculus. SE Qld, NSW 4. *C. fraseri*
5. Trees or rarely a montane shrub 2 m high; leaves 9–24 $\times$ 6–13 cm, inflorescences 4–12 cm long, 50–100-flowered. E Qld, NE NSW ... 6. *C. bartramia sens. lat.*
- Shrubs, prostrate or erect to 1 m high; leaves 1.4–11.5 $\times$ 0.4–5 cm; inflorescences 1–2.3 cm long, 1–10-flowered 6
6. Flowers red; leaves glaucous, ovate to ovate-lanceolate, 3.5–7 $\times$ 1.5–5 cm. NE Qld 9. *C. reticulata*
- Flowers white, yellow, pink or pale green; leaves 1.4–11.5 $\times$ 0.4–3 cm 7
7. Flowers 14–17 mm diameter. Central Qld 10. *C. johnsonii*
- Flowers 4.5–7 mm diameter 8

8. Leaves glaucous and velutinous above, margins markedly undulate; peduncles 0.9–1.2 mm long. Central subcoastal Qld 11. *C. pearnii*
 Leaves green and pubescent above, margins not markedly undulate; peduncles 3–8 mm long 9
9. Flowers pink; leaves lobed. S inland Qld. 14. *C. pedleyi*
 Flowers white or yellow; leaves serrate or crenate 10
10. Flowers white, 6–7 mm diameter; leaf blades lanceolate, 1.5–11.5 × 0.4–1.6 cm. SE Qld 12. *C. leiperi*
 Flowers yellow, 12–15 mm diameter; leaf blades ovate to lanceolate, 3.5–8.5 × 1–3 cm. Central eastern Qld. 13. *C. leichhardtii*

Commersonia subgenus **Verticillata** Guymer, **subg. nov.** affinis subgeneri *Commersoniae* sed staminodiis profunde trilobis petaloideis, pedicellis articulatis et capsulis 5-alatis differt. **Typus:** *Commersonia viscidula* Guymer.

Notes: The subgenus differs from subgenus *Commersonia* by its deeply 3-lobed petaloid staminodes, the articulate pedicels and 5-winged capsules. It contains 5 species and is restricted in distribution to eastern subtropical Australia.

Etymology: The subgenus name *Verticillata* refers to the upper half of the whorled central staminodes being radiate while the lower half enclose the ovary.

1. **Commersonia viscidula** Guymer, **sp. nov.** affinis *C. fraseri* sed ab ea foliis ramulis inflorescentiis calycibus viscidis differt.

Typus: Queensland. WIDE BAY DISTRICT: Mt Tinbeerwah, between Cooroy and Tewantin, 26° 24'S, 152° 59'E, 4 October 1981, G.P. Guymer 1614 (holo: BRI; iso BRI, CANB, K, MEL, NSW, PERTH).

Commersonia sp. 1 (Stanley & Ross 1986).

Commersonia sp. (Mt Tinbeerwah G.P. Guymer 1786) (Guymer 2002).

Spreading shrub 1–3 m, multistemmed, bark grey with viscid branchlets, leaves, inflorescences and calyces (glandular hairs usually red, 0.5–2.8 mm long), suckering from rhizomes; branchlets pubescent (hairs stellate 0.3–0.6 mm diameter, red-glandular 1–2 mm long), glabrescent. Leaves pale green above, glaucous

below; blades ovate or ovate-lanceolate, occasionally lower leaves 3-lobed, 5–16 × 2.5–8.5 (–13) cm; margins undulate, crenate to serrate, teeth 20–34 pairs, up to 2 mm long; bases truncate or slightly cordate or oblique; apices acute; pubescent above (hairs mid-dense, stellate 0.2–2.4 mm diameter, red-glandular 0.1–0.7 mm long) and velutinous below (hairs stellate 0.4–1.4 mm diameter, red-glandular 0.2–0.8 mm long on midvein and lateral veins); 5-veined at base, venation slightly impressed above, raised below, lateral veins 7–9 pairs; petioles 6–15 mm long, pubescent (hairs stellate & red-glandular). Stipules linear-triangular, 3–10 × 1–2 mm, pubescent (hairs stellate & red-glandular). Inflorescences 10–30-flowered, 3.5–8 cm long; peduncles 6–25 mm long; bracts lanceolate, 5–7 × 0.7–1.2 mm. Flowers white, sepals sometimes with a pale pink flush, 7–10 mm diameter; pedicels 4–9 mm long, articulate below the middle. Calyces 3.8–4.2 mm long, pubescent outside (hairs stellate & red-glandular), puberulous inside (hairs simple & red-glandular); lobes ovate-acute, 2.2–3.2 × 2.4–3.6 mm. Petals 3.5–5 mm long, central lobe spatulate or obovate, margins undulate, apex shallowly 2–4-lobed, 2.9–3.8 mm long, 1.7–2 mm wide at apex, 0.7–0.8 mm wide at base; lateral lobes rounded, 0.8–1.1 × 0.9–1.2 mm. Staminal tube 0.4–0.6 mm long; central staminodes narrowly spatulate, 4–6 mm long, apex 0.6–0.7 mm wide, middle c. 0.2 mm wide, 0.8–1 mm wide at base, lower half forming a cone over the ovary, upper half radiate; lateral staminodes linear-spatulate, 2–3 mm long, 0.12–0.16 mm wide at base, 0.2–0.4 mm wide near apex. Ovary ovoid, 1.1–1.3 mm diameter, glabrous or with rudimentary bristles and stellate hairs, 5-lobed and 5-winged, margins of sutures pink or red,

ovules 3 or 4 per loculus; styles coherent at apex, 0.4–0.5 mm long; stigmas globular, 0.1–0.12 mm diameter. Capsules dark brown 18–28 mm diam., 5-winged, wings chartaceous, 4–6 mm long; bristles 2.5–6 mm long, with stellate and

simple hairs. Seeds 1–3 per loculus, black, obovoid, angular, $2.5\text{--}2.8 \times 1.8\text{--}2$ mm, smooth with fine longitudinal striations; strophiole fawn or pale yellow, 1–1.3 mm long. **Fig. 1.**



Fig. 1. *Commersonia viscidula*. A. flowering branchlet. $\times 0.8$. B. open flower. $\times 8$. C. young flower before stamens open. $\times 8$. All from Guymer 1853 (BRI).

Additional specimens examined (total of 28 seen):

Queensland. BURNETT DISTRICT: Track to Coongarra Rock, 11.5 km ENE of Coalstoun Lakes, 25° 34'S, 151° 59'E, Sep 2002, *Forster PIF28849* (BRI); Summit of Coongarra Rock, S.F. 1344, 25° 39'S, 151° 58'E, Mar 1994, *Thomas COO1* (BRI). WIDE BAY DISTRICT: Woowonga Creek, foothills of Woowonga Range, 25° 29'S, 152° 08'E, Oct 1995, *Young 2040* (BRI); Summit of Mt Walsh, Mt Walsh N.P., 25° 34'S, 152° 03'E, Aug 1996, *Forster PIF19549* (BRI); Towards the top of Biggenden Bluff, Oct 1930, *White 7327* (BRI); 1.5 km SSW of Biggenden Bluff, Mt Walsh N.P., 25° 35'S, 152° 01'E, Sep 2002, *Bean 19232* (BRI); Summit of Mt Tinbeerwah, Tewartin S.F. 959, 26° 23'S, 152° 58'E, Aug 1994, *Grimshaw G902* (BRI); Mt Tinbeerwah, Apr 1962, *Everist 7166* (BRI); *loc. cit.*, Aug 1982, *Guymer 1780* (BRI); *loc. cit.*, *Guymer 1786* (AD, BRI, CANB, NSW); *loc. cit.*, Jan 1970, *Henderson H533* (BRI). **New South Wales.** NORTHERN TABLELANDS: Severn River Gorge, W of Appletree Flat, 29° 08'S, 150° 59'E, Dec 1990, *Bean 2761* (BRI); 8.5 km along Upper Rocky River road, 29° 10'S, 152° 14'E, c. 40 km SE of Tenterfield, Dec 2003, *Bean 21455* (BRI). NORTH COAST: Macleay River, Nov 1906, *Boorman s.n.* (BRI [AQ81584], G, NSW); Gloucester Buckets, Sep 1897, *Maiden s.n.* (NSW, W); Darkey Creek, 35 km SW of Singleton, Dec 1976, *Guymer 841* (BRI); *loc. cit.*, Oct 1970, *Fisher 262* (BRI); Nymboida N.P., 29° 40'S, 152° 31'E, W of Grafton, *s.dat.*, *s.coll.* (BRI); Old Darkey Creek, c. 35 km S of Singleton on Windsor road, Feb 1980, *Williams s.n.* (BRI [AQ780689]); Parsons Creek, between Howes Valley & Bulga, Feb 1963, *Pullen 3804* (BRI).

Distribution and habitat: *Commersonia viscidula* occurs from Woowonga Range, south-east Queensland to Bulga, central coast of New South Wales. It grows in open shrublands, heathlands dominated by *Leptospermum microcarpum*, woodlands and eucalypt forests. The species is found on hills, upper slopes and along creeks on soils varying from rock pavements, to sandy or alluvial.

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

Affinities: *Commersonia viscidula* is related to *C. fraseri* but differs from that species in its viscid leaves, branchlets, inflorescences and calyxes.

Conservation status: The species has a wide distribution and is represented in conservation areas across its distributional range. It is not considered to be at risk.

Etymology: The epithet is derived from the Latin word *viscidulus*, referring to the sticky leaves, branchlets and inflorescences that characterise this species.

2. *Commersonia argentea* Guymer, sp. nov.
affinis *C. fraseri* sed ab ea ramulis foliis inflorescentiisque argenteis velutinis differt.

Typus: Queensland. BURNETT DISTRICT: 0.3 km E of Cadarga intersection on road to Allies Creek, 16 November 1981, *G.P. Guymer 1642* (holo: BRI; iso: BRI, K, MEL, NSW).

Commersonia sp. 2 (Stanley & Ross 1986).

Commersonia sp. (Cadarga G.P. Guymer 1642) (Guymer 2002).

Shrub 1.5–4 m tall, suckering from rhizomes; branchlets silvery velutinous (stellate hairs 0.2–1.2 mm diameter, and occasional glandular hair to 0.2 mm long). Leaves silvery or glaucous, discolorous; blades ovate to ovate-acute, (2.5–) 3.5–13 × (1–) 2–7.5 (–8) cm; margins crenulate, teeth 34–39 pairs, up to 1 mm long; bases cordate or truncate and oblique; apices obtuse; white stellate-velutinous above (hairs 0.2–0.7 mm diameter) and below (hairs 0.15–0.4 mm diam.); 5-veined at the base, midvein and lateral veins slightly impressed above, veins raised below, lateral veins 6–7 pairs; petioles 4–8 mm long, stellate-velutinous. Stipules triangular, 4–6 × 0.7–1 mm, early deciduous, stellate-pubescent. Inflorescences 10–30-flowered, 2–5 cm long; peduncles 10–20 mm long; axes white stellate-velutinous (hairs 0.15–0.7 mm diameter & glandular hairs to 0.4 mm long). Flowers white or cream, 9–10 mm diameter; pedicels 9–11 mm long, articulate 3.5–3.8 mm from flower base. Calyx lobes 2.7–3 × 1.9–2.2 mm, white stellate-velutinous outside, sparsely puberulous inside. Petals 4.5–5.1 mm long, central lobe spatulate, shallowly 3 or 4-lobed at apex, margins undulate, 3.5–3.8 mm long, 0.9–1.0 mm wide at base, 1.2–1.3 mm wide at apex, lateral lobes rounded, 1.1–1.3 × 0.7–0.8 mm. Staminal tube 0.5–0.6 mm long. Staminodes: central spatulate, 4.6–5.3 mm long, 0.2–0.3 mm wide in middle, 0.7–0.8 mm wide at base, apex 0.5–0.6 mm wide and shallowly 3-lobed, lobes rounded; laterals linear-spatulate, 3.8–4.3 mm long, c. 0.1 mm wide in lower half and 0.3 mm

wide near apex. Ovary 5-lobed and 5-winged, 0.9–1 mm diameter, with rudimentary bristles and stellate hairs; ovules 6 per loculus; styles *c.* 0.5 mm long, free; stigmas clavate, free, *c.* 0.08 mm diameter. Capsules and seeds not seen.

Additional specimens examined: Queensland. MITCHELL DISTRICT: Bull Creek Gorge, Sep 1984, *O'Keeffe s.n.* (BRI [AQ418119]). LEICHHARDT DISTRICT: 40 km N of Arcadia Valley, Mar 1990, *Ambrose s.n.* (BRI [AQ470721]); Nogoia River Gorge, Mt Playfair Holding, Nov 1985, *Don s.n.* (BRI [AQ398750]); Injune - Rolleston road, 86 km N of Injune, Mar 1994, *Halford Q2161* (BRI); Castlevale Station, W of Springsure, Feb 1984, *Jackes s.n.* (BRI [AQ544572]); 70 km E of Tambo, road to Salvator Rosa N.P., Nov 1989, *McRobert s.n.* (BRI [AQ459483]). BURNETT DISTRICT: 0.3 km E of Cadarga intersection on road to Allies Creek, Nov 1981, *Guymier 1642* (BRI, K, MEL, NSW); Kragra district, Feb 1980, *Hando 137* (BRI); Kragra, near Chinchilla, Jan 1980, *Lithgow 687* (BRI); Cadarga, Dec 1981, *Lithgow 1009* (BRI).

Distribution and habitat: *Commersonia argentea* is confined to central and south east Queensland from the Carnarvon Range to the Chinchilla area where it is a component of eucalypt open forest on ridges, or undulating terrain or along watercourses and occurs in sandy soils. It is often found in stands that can cover up to an hectare due to its suckering from rhizomes.

Phenology: Flowers have been recorded from November to January, and in March.

Affinities: *Commersonia argentea* is related to *C. fraseri* but differs from that species by is silvery velutinous branchlets, leaves and inflorescences.

Conservation status: This species has a sporadic distribution but has numerous plants at most locations due to its suckering habit. It occurs near the National Park estate but has not yet been conserved. It is not considered to be at risk.

Etymology: The specific epithet *argentea* (Latin for *silver*) refers to the silver coloured leaves of this species.

3. *Commersonia beeronensis* Guymier, sp. nov.
affinis *C. fraseri* sed ab ea foliis ramulis inflorescentiisque aureis pubescentibus differt.

Typus: Queensland. BURNETT DISTRICT: Beeron Holding, Pretty Face Mountain, 11 September 1996, *P.I. Forster PIF19610* (holo: BRI; iso: BRI, K, MEL, NSW).

Commersonia sp. (Beeron P.I. Forster PIF4658) (Guymier 2002).

Shrub 1–2.5 m tall, suckering from rhizomes; branchlets golden pubescent (stellate hairs 0.3–1 mm diameter), glabrescent. Leaves green, paler below; blades entire or lower leaves sometimes 3-lobed, ovate to lanceolate 5–12 × 1–4 cm; margins denticulate, teeth 24–30 pairs, up to 1 mm long; bases truncate or sometimes cordate; apices acuminate; pubescent above (hairs mid-dense, stellate 0.4–0.8 mm diameter, glandular <0.1 mm long), golden brown stellate pubescent below (stellate hairs 0.5–1.2 mm diameter); 5-veined at the base, midvein and lateral veins slightly impressed above, veins raised below, lateral veins 5–8 pairs; petioles stellate-pubescent, 4–7 mm long. Stipules triangular or ovate, 1.5–6 × 0.7–1 mm, early deciduous, stellate-pubescent. Inflorescences 9–24-flowered, 2–5 cm long; peduncles 6–10 mm long, stellate-pubescent. Flowers cream, 6–7 mm diameter; pedicels 2.5–5 mm long, articulate 1–1.5 mm from flower base. Calyx lobes triangular, 2–2.2 × 2–2.5 mm, stellate-pubescent outside, sparsely puberulous inside. Petals 4.5–4.8 mm long; central lobe obovate, entire, 3.5–3.8 mm long, 1.2–1.5 mm wide at apex, 0.7–0.8 mm wide at base; lateral lobes rounded, 0.8–0.9 × 0.9–1 mm. Staminal tube 0.3–0.4 mm long; central staminodes narrowly spatulate, 5–5.3 mm long, 0.2–0.3 mm wide in middle, 1.1–1.3 mm wide at base, apex 0.5–0.6 mm wide; lateral staminodes linear-spatulate, 3.8–4 mm long, *c.* 0.1 mm wide in lower half and 0.3 mm wide near apex. Ovary 5-lobed and 5-winged, 0.8–0.9 mm diameter, with rudimentary bristles and stellate hairs; ovules 6 per loculus; styles twisted, 0.5–0.6 mm long, coherent at apex; stigmas clavate, free, *c.* 0.06 mm diameter. Capsules 5-winged, 18–22 mm diameter, dark brown, wings chartaceous, 4.5–6 mm long; bristles 1.4–2.1 mm long, with stellate hairs. Seeds 1–3 per loculus, ovoid and angular, tuberculate, 2.5–2.9 × 1.9–2.1 mm, dark brown to black; strophiole 0.8–1.1 mm long, fawn or tan. **Fig. 2.**



Fig. 2. *Commersonia beeronensis*. A. flowering branchlet. $\times 1$. B. flower. $\times 8$. A from Halford Q1810 (BRI); B from Forster PIF4658 (BRI).

Additional specimens examined: Queensland. BURNETT DISTRICT: 3 km WNW of Manar Homestead, Aug 1988, Forster PIF4658 (BRI); Beeron Holding, 5 km WSW of Toondahra Homestead, Sep 1989, Forster PIF5760 (BRI); Beeron Holding, 7 km W of Toondahra Homestead, Aug 1990, Forster PIF7125 (BRI); Beeron Holding, 45 km S of Mundubbera, Nov 2001, Franks AJF011014 (BRI); Beeron Holding, 'Rocky Paddock', 47.8 km SSW of Gayndah, Aug 1993, Halford Q1810 (BRI).

Distribution and habitat: *Commersonia beeronensis* is confined to National Park (previously Beeron Holding), in SE Queensland. It occurs on granite outcrops, on slopes and at base of granite domes in open forests and woodlands dominated by *Eucalyptus dura*, *E. petalophylla*, *E. acmenoides* and *Lophostemon confertus* (RE 11.12.20).

Phenology: Flowers and fruits have been collected in August, September and November.

Affinities: *Commersonia beeronensis* is related to *C. fraseri* but differs from that species by the golden pubescent branchlets, leaves and inflorescences.

Conservation status: *Commersonia beeronensis* is known only from Beeron Holding that is now a National Park. It is an uncommon plant where it occurs in the Park and is currently listed as Vulnerable under the NCA. Severe wildfires kill the above ground parts of this plant with regeneration occurring from subterranean suckers and seed.

Etymology: The specific epithet refers to Beeron Holding, the only known location for the species.

4. *Commersonia fraseri* J. Gay, *Mem. Mus. Par.* 10: 215–216, t. 4 (1824); *Commersonia fraseri* J. Gay var. *fraseri*, *Mem. Mus. Par.* 10: 216 (1824); *C. fraseri* var. *macrophylla* J. Gay, *Mem. Mus. Par.* 10: 216–218, t. 4.1 (1824). **Type:** “Habitat in Novae Hollandiae Nova Walesia meridionali ... Cl. Fraser [553]” (holo: P; iso: K).

Commersonia fraseri var. *microphylla* J. Gay, *Mem. Mus. Par.* 10: 218, t. 4.2 (1824). **Type:** “Nullum huic specimini numerum apposuit Cl. Fraser” (holo: P).

Notes: Gay described *Commersonia fraseri* based on two specimens collected by Charles Fraser and given to Gaudichaud on his visit to Australia on Freycinet’s voyage 1817–1820. Gay recognised two varieties of *C. fraseri*, var. *macrophylla* and var. *microphylla* but not a type variety. The detailed description of *C. fraseri* var. *macrophylla* indicates this to be the type variety. Gay indicated his *C. fraseri* var. *microphylla* was possibly a proper species “an species propria?”.

5. *Commersonia rossii* Guymer, **sp. nov.** affinis *C. fraseri* sed ab ea foliis majoribus et trichomatibus stellatus majoribus (0.5–1.8 mm diametro) in ramulis, inflorescentiis et floribus differt.

Typus: New South Wales. SOUTH COAST: On the southern side of the Lochiel – South Pambula road, c. 2 km E of Lochiel, 4 October 1985, *D.E. Albrecht 2047* (holo: MEL; iso: BRI).

Commersonia sp. 1 (Short 1996).

Shrub or small tree, 4–10 m tall, suckering from rhizomes; branchlets rusty brown stellate-tomentose (hairs 1.2–1.8 mm diameter). Leaves green, paler below; blades ovate to ovate-lanceolate, 6.5–25 (–31) × 2.8–15 (–26) cm; margins irregularly crenate, teeth 15–30 pairs, up to 3 mm long; bases truncate or cordate; apices acuminate; pubescent above (hairs sparse to mid-dense, stellate 0.1–1.8 mm diameter as well as simple), stellate-tomentose below (hairs 0.2–1.3 mm diameter); 5- or 7-veined at the base, midvein and lateral veins slightly

impressed above, veins raised below, lateral veins 7–9 pairs; petioles 9–20 (–32) mm long, stellate-tomentose. Stipules triangular, 3–10 × 1–4 mm long, early deciduous, stellate-pubescent. Inflorescences 18–60-flowered, 3.5–9 cm long; peduncles (3–) 10–22 mm long; bracts ovate-lanceolate, acute, 2.8–6 × 0.9–1.7 mm; axes rusty brown stellate-tomentose (hairs 0.5–0.8 mm diameter). Flowers white or cream, sepals occasionally pale pink, 9–11 mm diameter; pedicels 2.5–5.5 mm long, articulate 1.2–3 mm from flower base. Calyces stellate-pubescent outside, puberulous inside, 4.5–4.8 mm long; lobes ovate-acute, 3.5–4.5 × 2.4–2.8 mm wide. Petals obovate, entire or 2-lobed at apex, 4.3–4.5 mm long; central lobe spatulate, 2.8–3.1 mm long, 0.4–0.6 mm wide in middle, 1.6–1.7 mm wide at apex; lateral lobes rounded, 1–1.2 × 0.9–1 mm long. Staminal tube 0.3–0.4 mm long; central staminodes spatulate, margins undulate, apex 2 or 3-lobed (lobes to c. 0.5 mm long), 5–6 mm long, 0.3–0.35 mm wide in middle, 0.7–0.9 mm wide at base, apex 0.7–1.3 mm wide; laterals linear-spatulate, entire or 2-lobed (lobes to c. 0.5 mm long), 3–4 mm long, 0.1–0.15 mm wide in lower half, 0.4–0.7 mm wide near apex. Ovary 5-lobed and winged, 1–1.3 mm diameter, with rudimentary bristles and stellate hairs; ovules 8 per loculus; styles 0.5–0.6 mm long, coherent at the top; stigmas clavate, free, c. 0.8 mm diameter. Capsules 5-winged, 15–25 mm diameter.

Additional specimens examined: **New South Wales.** SOUTH COAST: Near Egans Peak Nature Reserve, Sep 1984, *Albrecht 912* (BRI, MEL); Lochiel – South Pambula road, c. 2 km E of Lochiel, Oct 1985, *Albrecht 2047* (BRI, MEL); 8.2 km W along Broadwater road from Princess Highway, Oct 1991, *Albrecht 4769* (BRI, MEL); Mt Dromedary road, SW of Narooma, Oct 1963, *Adams 687* (BRI, CANB, E, L); 6.4 km E of Bega, Oct 1984, *Stewart 154 & Whigham* (BRI, CANB); Deep Creek, Eden – Bombala road, Jun 1959, *Webb & Tracey 3642* (BRI). **Victoria.** GIPPSLAND: Combienbar road, 2 miles [3.3 km] NE of junction of Errinundra road, Sep 1970, *Beaulehole ACB34205* (BRI, MEL).

Distribution and habitat: *Commersonia rossii* is confined to the South Coast, New South Wales to East Gippsland, Victoria. It occurs in wet sclerophyll forest, open forest, riparian forests dominated by *Tristaniopsis laurina* and the margins of warm-temperate rainforest.

Phenology: Flowers have been collected in August and September.

Affinities: *Commersonia rossii* is related to *C. fraseri* but differs from that species by its larger leaves ($6.5\text{--}25 \times 2.8\text{--}15$ cm), and larger stellate indumentum (hairs $0.5\text{--}1.8$ mm diameter) on the branchlets, leaves and inflorescences.

Etymology: Named in honour of Dr Jim Ross, Chief Botanist, National Herbarium of Victoria.

Commersonia subgenus **Commersonia**

Type: *Commersonia echinata* J.R.Forst. & G.Forst.

6. *Commersonia obliqua* Guymer, sp. nov. affinis *C. echinatae* sed ab ea foliis velutinis lanceolatis usque triangulari-lanceolatis, apicibus anguste acuminatis et foliorum basibus valde manifestis obliquis differt.

Typus: Vanuatu. EFATE ISLAND: Undine Bay, 28 April 1928, *S.F. Kajewski 238* (holo: BRI; iso: K, P).

Shrubs or trees 3–15 m tall; branchlets stellate-pubescent (hairs $0.15\text{--}0.5$ mm diameter), glabrescent. Leaves green, glaucous below; blades lanceolate or triangular-lanceolate, glabrous above except for a few scattered hairs along primary veins, white or pale grey velutinous below (stellate hairs $0.1\text{--}0.2$ mm diameter), $(3\text{--}) 5\text{--}17.7 \times 1.8\text{--}6.2$ cm; apices narrowly acuminate; bases cordate and markedly oblique; margins irregularly serrate, teeth to 2 mm long; midvein and lateral veins slightly sunken above, raised below; petioles $4\text{--}11.5$ mm long, pubescent. Stipules narrowly triangular, $2.5\text{--}6 \times 0.5\text{--}1.2$ mm, early deciduous, stellate-pubescent. Inflorescences $2.5\text{--}5.7$ cm long, stellate-pubescent. Flowers white, 5–6 mm diameter. Sepals stellate-pubescent, glabrous at base inside; lobes broadly-ovate, acute, $1.3\text{--}2.0$ mm long, $1.7\text{--}2.5$ mm wide; petals $2.5\text{--}3.3$ mm long, tube $0.9\text{--}1.1$ mm long, ligule $1.7\text{--}2$ mm long, $0.4\text{--}0.5$ mm wide, glabrous outside, stellate-puberulent inside. Staminal tube $0.4\text{--}0.5$ mm long; central staminodes lanceolate, acute, $1.6\text{--}2.1 \times 0.5\text{--}0.7$ mm; lateral staminodes $0.5\text{--}0.75$ mm long, stellate-puberulent. Ovary 5-lobed, *c.* 0.8 mm diameter; ovules $(2\text{--}) 4$ per loculus; styles connate above, free below, $0.45\text{--}0.55$ mm long; stigmas capitate. Capsules $27\text{--}32$ mm diameter, bristles $7\text{--}12$ mm long, stellate-pubescent. Seeds 2 per loculus, botuliform, $2.5\text{--}2.7 \times 1.5\text{--}17$ mm, dark brown to

black; strophiole pale yellow, filamentous ($5\text{--}8$), $2\text{--}2.5$ mm long. **Fig. 3A.**

Additional specimens examined: **Vanuatu.** EFATE ISLAND: Undine Bay, Apr 1928, *Kajewski 238* (BRI, K, P); *loc. cit.*, Aug 1896, *Morrison s.n.* (K). ERROMANGO ISLAND: Umbornale, Jul 1930, *Cheeseman 5* (K); Nouankao River & vicinity, Aug 1971, *Chew Wee-Lek RSNH 139* (K); between Nouankao Camp & Ipota, *c.* 10 km E of Ipota, Aug 1971, *Green RSNH 1312* (K, P); Camp 5, Nevel, Jul 1966, *Johnson 2* (K, P); Dillous Bay, Jul 1896, *Morrison s.n.* (K); tableland, July 1896, *Morrison s.n.* (K). Tanna Is: May 1968, *Bernardi 13124* (K, P, W). ANEITYUM ISLAND: 3 miles [5 km] NE of Anelgauhahat, in 1955, *Cheeseman s.n.* (BM, P); Oct 1858, *McGillivray 5* (BM, P); Anelgauhahat, 5 & 13 June 1896, *Morrison s.n.* (K); Anumy Valley, W side, Jun 1896, *Morrison s.n.* (K); S of Ithurum, Jun 1896, *Morrison s.n.* (K); S of Eili, Jul 1971, *Raynal RSNH 16135* (K); Oct 1858, *Saunders 5* (K); Anelgauhahat Bay, Sep 1929, *Wilson in Kajewski 958* (K, P).

Distribution and habitat: *Commersonia obliqua* is known from Vanuatu in tropical lowland rainforest.

Phenology: Flowers have been collected in April to September and fruits from April to October.

Affinities: *Commersonia obliqua* is allied to *C. echinata* from Tahiti but differs from that species by its lanceolate to triangular-lanceolate velutinous leaves, narrowly acuminate leaf apices and markedly pronounced oblique leaf bases.

Etymology: The epithet is from Latin *obliquus* referring to the markedly oblique leaf bases.

7. *Commersonia bartramia* (L.) Merr., *Interpr. Rumph. Herb. Amboin.* 362 (1917); *Muntingia bartramia* L., *Amoen. Acad.* 4: 124 (1759). **Type: Illustration of *Restiaria alba* by Rumphius, *Herb. Amboin.* 3: t. 119 (1743). **Epitype** [here chosen]: Indonesia. Ambon: Kolukken, 1 April 1918, *Kornassi 1071* (BRI; isoepi: K, P).**

Distribution: This species is widespread throughout Asia from China, throughout SE Asia, New Guinea, Solomon Islands, New Caledonia, Fiji and Australia.

Notes: The illustration of *Restiaria alba* in Rumphius (*loc. cit.*) is stylised and lacks detail. An epitype (*Kornassi 1071*) is selected to supplement the illustration and fix the application of the name *Commersonia bartramia*.

The degree of variation shown in leaf and floral characters of specimens currently referred to *Commersonia bartramia* indicate that further taxa may be included in this complex.



Fig. 3. *Commersonia novoguineensis*. A. flowering branchlet. $\times 0.75$. *Commersonia obliqua*. B. fruiting branchlet. $\times 0.75$. A from Craven & Schodde 1332 (BRI); B from Kajewski 958 (BRI).

8. *Commersonia novoguineensis* (Gilli) Guymer, comb. nov.

Disaster novoguineensis Gilli, *Ann. Naturhist. Mus. Wien* 83: 454–455 (1980). **Type:** Papua New Guinea. Bachufer bei Kompam, 1650m, February 1974, *A. Gilli G557* (holo: W).

Notes: This species was described by Gilli under a new genus and subsequently placed in the synonymy of *Commersonia bartramia* by van Steenis (1982). The species is allied to *C. bartramia* but differs from that species in its ferruginous branchlets, leaves, inflorescences, flowers and fruits, and by its strongly reticulate veins and leaves being glabrescent above. **Fig. 3B.**

Additional specimens examined: **Papua New Guinea.** WESTERN HIGHLANDS PROVINCE: 1 mile [1.6 km] S of Birip on Kompam-Wabag Road, May 1965, *Flenley ANU2815* (K, L); Near Yogos village, lower Tale valley, Jun 1960, *Hoogland & Schodde 6660* (BRI); Kapiago, 5° 22'S, 142° 33'E, Nov 1968, *Vandenbergh & Galore NGF42051* (BRI, CANB, L, K); Sirunki, pathway to swamp, below Kaiamanda corner, Aug 1962, *Walker ANU594* (K, L); Wurup area, 10 miles [16 km] SE of Mt Hagen, Jul 1966, *Wheeler ANU6219* (BRI, CANB, K, L); Kompam, Jul 1959, *Womersley NGF11250* (BRI); Between Kompam & Porget, 5° 30'S, 143° 40'E, Jul 1959, *Womersley NGF11251* (BRI, K). EASTERN HIGHLANDS PROVINCE: Mt Wilhelm, July 1959, *Brass 30767* (K, L); Keglsugl, 6° 00'S, 145° 00'E, Feb 1964, *Millar NGF23108* (BRI, CANB, L); Pengagl Creek, 5° 45'S, 145° 05'E, Aug 1964, *Sayers & Millar NGF19927* (BRI, CANB, L); Above Keglsugl, 5° 50'S, 145° 05'E, May 1966, *Streimann, Kairo & Maniak NGF27751* (BRI, CANB, K, L). MOROBE PROVINCE: near Haumga, Apr 1966, *Craven & Schodde 1107* (BRI, CANB, K, L); Headwaters of Langimar River, Apr 1966, *Craven & Schodde 1332* (BRI, K, L); Edie Creek road, c. 4 miles [6.7 km] SW of Wau, Oct 1963, *Hartley 12304* (BRI); Near Wagau airstrip, Dec 1963, *Sayers sub Hartley 12585* (BRI); Wagau, 6° 45'S, 146° 50'E, Nov 1963, *Womersley NGF17821* (BRI, CANB, L). SOUTHERN HIGHLANDS PROVINCE: near Kiburu, Mendi Valley, Jul 1961, *Schodde 1429* (K, L). CENTRAL PROVINCE: Between Efogi & Launumu, 9° 09'S, 147° 40'E, Oct 1973, *Croft & Lelean LAE60557* (BRI, CANB, K, L); Mt Pigini, SE of Efogi, 9° 10'S, 147° 35'E, Sep 1970, *Stevens LAE50445* (BRI, CANB, K, L).

Distribution and habitat: *Commersonia novoguineensis* is restricted to Papua New Guinea at altitudes of between 1200–3000 m from Kapiago in the Western Highlands Province to Efogi in Central Province and occurs in montane

rainforest, on rainforest margins and in eucalypt forest.

Phenology: Flowers have been collected in April to July and September to November, with fruits collected in February, May, July, August and December.

9. *Commersonia reticulata* Guymer, sp. nov.
affinis *C. leiperi* et *C. pearnii* sed ab iis floribus rubris, staminodiis erectis lateralibus et foliis ovatis usque ovato-lanceolatis differt.

Typus: Queensland. NORTH KENNEDY DISTRICT: Princess Hills section, Lumholtz National Park, 18° 19'S, 145° 25'E, 10 April 2005, *P.I. Forster PIF30680 & K.R. McDonald* (holo: BRI; iso: AD, BRI, CANB, DNA, K, L, MO, MEL, NE, NSW, PERTH).

Shrubs or subshrubs 0.3–1 m tall, suckering from rhizomes; branchlets pubescent (hairs stellate, 0.4–1.2 mm diameter), glabrescent. Leaves glaucous or silvery, paler below; blades broadly ovate to ovate-lanceolate, rarely 3-lobed, (3–) 3.5–7 × 1.5–5 cm; margins irregularly crenate, teeth 7–20 pairs, to 2 mm long; bases cordate; apices obtuse or rounded; tomentose above (stellate hairs 0.5–1.25 mm diameter) and below (stellate hairs 0.75–1.5 mm diam.); 5-veined at the base, veins raised below, impressed above, lateral veins 5–6 pairs; petioles 4–7 mm long. Stipules narrowly triangular, 5–8 mm long, stellate-pubescent. Inflorescences 2–5-flowered, 10–15 mm long; peduncles 3–3.5 mm long; axes stellate-pubescent (hairs 0.6–1.2 mm diameter); bracts linear-triangular, 4–6 × 0.3–0.5 mm wide, stellate-pubescent. Flowers red or bright red, 9–11 mm diameter, pedicels 0.2–0.3 mm long. Calyces 5–5.5 mm long, stellate-pubescent outside, pubescent inside (hairs stellate & glandular); lobes ovate-acute, 2.9–3.2 × 3.8–4 mm. Petals obovate, 4–4.5 mm long; central lobes rounded, 1.4–1.5 × 2–2.4 mm; lateral lobes rounded, 1.1–1.2 × 1.1–1.2 mm long. Staminal tube 1.8–2 mm long; central staminodes ovate-acute, 3.5–3.8 × 1–1.2 mm; lateral staminodes filiform, smooth or minutely papillate, erect, 0.7–0.8 × 0.15–0.16 mm. Ovary slightly 5-lobed, 1–1.5 mm diameter, with rudimentary bristles; ovules 6 per loculus; styles 1–1.2 mm long; stigmas capitate, 0.15–0.2 mm diameter. Capsules and seeds not seen. **Fig. 4.**

Additional specimens examined: Queensland. NORTH KENNEDY DISTRICT: Cashmere [Creek], Rockingham Bay, *s.dat.*, Armit *s.n.* (MEL 2126043); Princess Hills access road, Lumholtz N.P., Jul 1998, *Bean 13723*¹ (BRI, MEL); High Range, W of Townsville, Jan 1997, *Cumming 15495*² (BRI); 43 km along Gunnawarra to Minnamoolka road from junction with Kennedy Development road, just N of Wombinoo entrance, 18° 03'S, 145° 12'E, Apr 2005, *Forster PIF30657* & *McDonald*³ (BRI, DNA, NSW, MEL); Between Minnamoolka and Gunnawarra, Jan 1976, *Hyland 8606*³ (BRI, QRS); c. 40 miles [66.7 km] S of Mt Garnet, Oct 1967, *Morain 199*³ (BRI); Princess Hills, Lumholtz N.P., May 1996, *Williams 574*¹ (BRI).

Distribution and habitat: *Commersonia reticulata* is known from south of Mt Garnet to Townsville in north-east Queensland. It occurs in mixed open forest to woodland commonly including *Corymbia clarksoniana*, *Eucalyptus portuensis*, *E. crebra* and *Corymbia citriodora* on red kandosols on Tertiary surfaces (RE 9.5.5) or mixed open forest including *Eucalyptus portuensis*, *E. crebra*, *Corymbia clarksoniana* and *C. citriodora* on

shallow soils on metamorphic hills and ranges (RE 9.11.4).

Phenology: Flowers have been recorded for January, April, May, July and October.

Affinities: *Commersonia reticulata* is related to *C. leiperi* and *C. pearnii* but differs from those species by its red flowers, erect lateral staminodes and ovate to ovate-lanceolate leaves.

Conservation status: *Commersonia reticulata* is conserved in Lumholtz N.P. and is locally abundant due to suckering in its area of occurrence (up to 5 ha: *Forster PIF30680*; up to 4 ha: *Forster PIF30657*). The species is not considered to be at risk although it remains poorly surveyed with only three extant populations known (¹⁻³ in specimens cited above).

Etymology: The epithet is from Latin *reticula* referring to the prominently reticulate leaf venation that characterise this species.



Fig. 4. *Commersonia reticulata*. A. flowering branchlet. $\times 1.5$. B. flower. $\times 6$. All from *Forster PIF30680* (BRI).

10. *Commersonia johnsonii* Guymer sp. nov.
affinis *C. leiperi* et *C. pearinii* sed ab iis
floribus majoribus (14–17 mm diam.),
petalis longioribus (5.5–6.5 mm) et ovulis
10 per loculum differt.

Typus: Queensland. LEICHHARDT DISTRICT: Zamia Range, 3 km NNW of Springsure, 1 March 1960, R.W. Johnson 1398 (holo: BRI; iso: BRI, AD, CANB, DNA, K, MEL, NSW).

Commersonia sp. (Zamia Range R.W. Johnson 1398) (Guymer 2002).

Low spreading shrub 0.3–1 m tall, suckering from rhizomes; branchlets yellowish-brown stellate pubescent (hairs 0.1–1.2 mm diameter). Leaves green or slightly glaucous; blades lanceolate or lower leaves occasionally ovate and 3-lobed, (1.5–) 2–10 × 0.5–2 (–2.2) cm; margins crenate, teeth 6–14 pairs, obtuse or rounded, to 1 mm long; bases truncate; apices obtuse; yellowish-brown stellate-pubescent above and below (hairs 1–1.75 mm diameter); 5-veined at the base, venation impressed above, raised below, lateral veins 4–7 pairs; petioles pubescent, 3–12 mm long. Stipules narrowly triangular, 5–9 × 0.5–1 mm, stellate-pubescent. Inflorescences 3-flowered, 12–20 mm long; peduncles 3–4 mm long; axes stellate-pubescent; bracts linear or narrowly triangular, 4–10 mm long. Flowers white to pale pink, 14–17 mm diameter, pedicels 1–4 mm long. Calyces pubescent inside with simple, glandular (0.05–0.1 mm long) and some stellate hairs, stellate-pubescent outside, 7–8.5 mm long; lobes triangular, 4–5.5 × 4.5–6.5 mm. Petals 4.8–6.5 mm long, central lobe ovate, 2–2.5 × 1–1.4 mm, lateral lobes 0.8–1.2 mm long. Staminal tube 1–1.2 mm long; central staminodes triangular, caudate, 2.3–2.5 × 1.1–1.3 mm; lateral staminodes filiform, corniculate, minutely papillate, erect, protruding slightly above anther filament, 0.5–0.8 × 0.12–0.15 mm long. Ovary 1–1.1 mm diameter, with rudimentary bristles; ovules 10 per loculus; styles 0.5–0.6 mm long; stigmas clavate, c. 0.15 mm diameter. Capsules 12–18 mm diameter, bristles crinkled, 3–4 mm long and with stellate hairs; seeds 1 or 2 per loculus, ovoid, 2–2.5 × 1.4–1.6 mm, tuberculate with longitudinal ridges, fawn to black; strophiole clear or white, 0.5–0.7 mm long. **Fig. 5.**

Additional specimens examined: Queensland. LEICHHARDT DISTRICT: On road to Fred's Gorge,

Minerva Hills N.P., Dec 1996, *Johnstone* 709 (BRI); Zamia Range, 3 km NNW of Springsure, Mar 1960, *Johnson* 1398 (BRI); 1.7 km W of Fred's Gorge lookout, Minerva Hills N.P., Sep 2005, *Thomas* 3015 & *Halford* (BRI, MEL, NSW, CANB, DNA, PERTH); Mt Zamia, near Springsure, Jan 1961, *McLaughlin* 63 (BRI); *loc. cit.*, Sep 1962, *Story* 264 (BRI); *loc. cit.*, Jun 1985, *Young* 1050 (BRI); Minerva Hills N.P., W of Gorge Lookout, Mar 1999, *Stephens* SP7 (BRI); Mt Zamia, 4 km N of Springsure, Apr 1985, *Rodd* 4565 (BRI); Mt Zamia E.P. [now N.P.], near Springsure, Aug 1990, *Bean* 2077 (BRI); *loc. cit.*, Mar 1988, *Donnelly* s.n. (BRI [AQ437350]); near Springsure, Jul 1980, *O'Keeffe* 14 (BRI); From the cliffs, Springsure, in 1871, *Roth* 208 (MEL).

Distribution and habitat: *Commersonia johnsonii* is restricted to Zamia Range in Minerva N.P., near Springsure, central Queensland. It is found in *Corymbia citriodora* woodland (RE 11.8.4a) or shrubland of *Acacia curvinervia* (RE 11.8.7) on Minerva Hills volcanics (plugs, domes and dykes) of alkaline quartz, trachyte and rhyolite on hillsides in shallow stony soils. Other species present can include *Eucalyptus exserta*, *Acacia curvinervia* and *Alphitonia excelsa* with a grass layer of *Cymbopogon* and *Triodia* species. Plants of this species are common along a 500 m stretch of road, 1.7 km W of Fred's Gorge lookout (M. Thomas pers. comm.).

Phenology: Flowers are recorded for March, June to September, December and January. Fruits are recorded for March, April, August, September, December and January.

Affinities: *Commersonia johnsonii* is related to *C. leiperi* and *C. pearinii* but differs from these species by its larger flowers (14–17 mm diameter), longer petals (5.5–6.5) and 10 ovules per loculus.

Conservation status: The species has a restricted distribution on Mt Zamia and its total known populations are contained within Minerva N.P. Further survey work is required to determine its area of occupancy and population numbers.

Etymology: The species is named in honour of Robert William Johnson, botanist and previously Director of the Queensland Herbarium. He collected the type material of this species in 1960 and continues to make significant botanical contributions to our

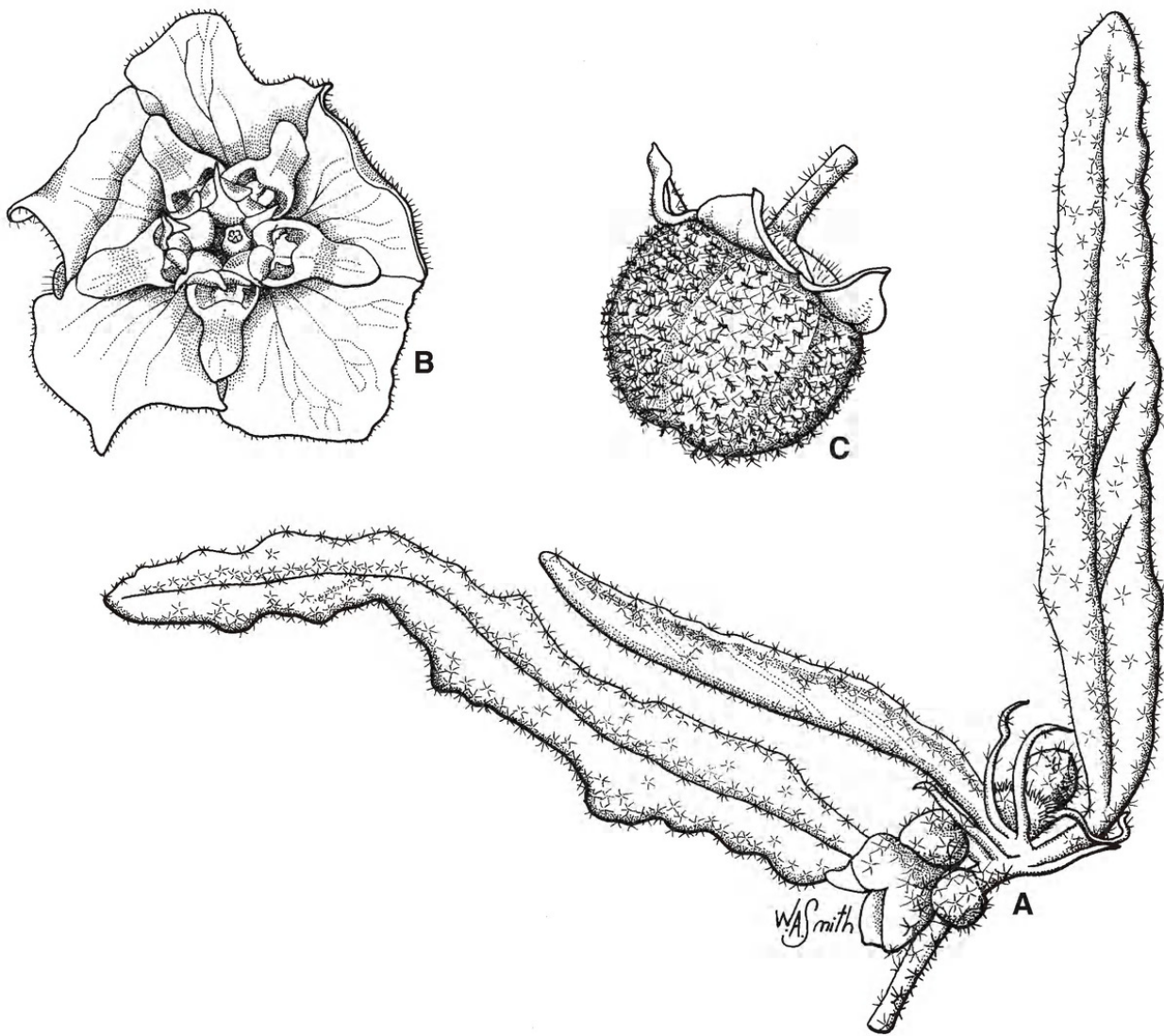


Fig. 5. *Commersonia johnsonii*. A. flowering branchlet. $\times 2$. B. flower $\times 4$. C. fruit. $\times 2$. All from *Thomas 3015 & Halford* (BRI).

understanding of the flora and vegetation of Queensland.

11. *Commersonia pearnii* Guymer, sp. nov.
affinis *C. leiperi* sed ab ea foliis glaucis velutinis marginibus valde undulatis et lobis 5–7 rotundatis obtusisve, petiolis longioribus et pedunculis brevioribus (0.9–12 mm longis), differt.

Typus: Queensland. LEICHHARDT DISTRICT: Blackdown Tableland National Park, Charlevue Lookout, 23° 44' S, 149° 02' E, 20 March 2005, *P.I. Forster PIF30624* (holo: BRI, iso: BRI, AD, CANB, DNA, G, K, L, MEL, MO, NE, NSW, P, PERTH).

Shrub 0.3–1 m tall, suckering from rhizomes;

branchlets stellate-pubescent (hairs pale yellow, 0.3–1.2 mm diam.), glabrescent. Leaves glaucous, discolorous; blades oblong-ovate, 1.4–5 $\times$ 0.8–1.6 cm; margins with 5 to 7 rounded or obtuse lobes 1–10 mm long, markedly undulate; bases cordate; apices rounded; stellate-velutinous above (hairs 0.4–0.6 mm diameter) and below (stellate hairs 0.6–1 mm diameter); 3–5-veined at the base, midvein and lateral veins slightly impressed above, raised below, lateral veins 5–6 pairs; petioles pubescent, 4–10 mm long. Stipules narrowly to linear triangular, 3–6 $\times$ 0.2–0.5 mm. Inflorescences 3–8-flowered, 3–5 mm long; peduncles 0.9–1.2 mm long; bracts narrowly triangular, pale yellow stellate-pubescent, deciduous, 2–3.5 $\times$ 0.2–0.3 mm; axes stellate-

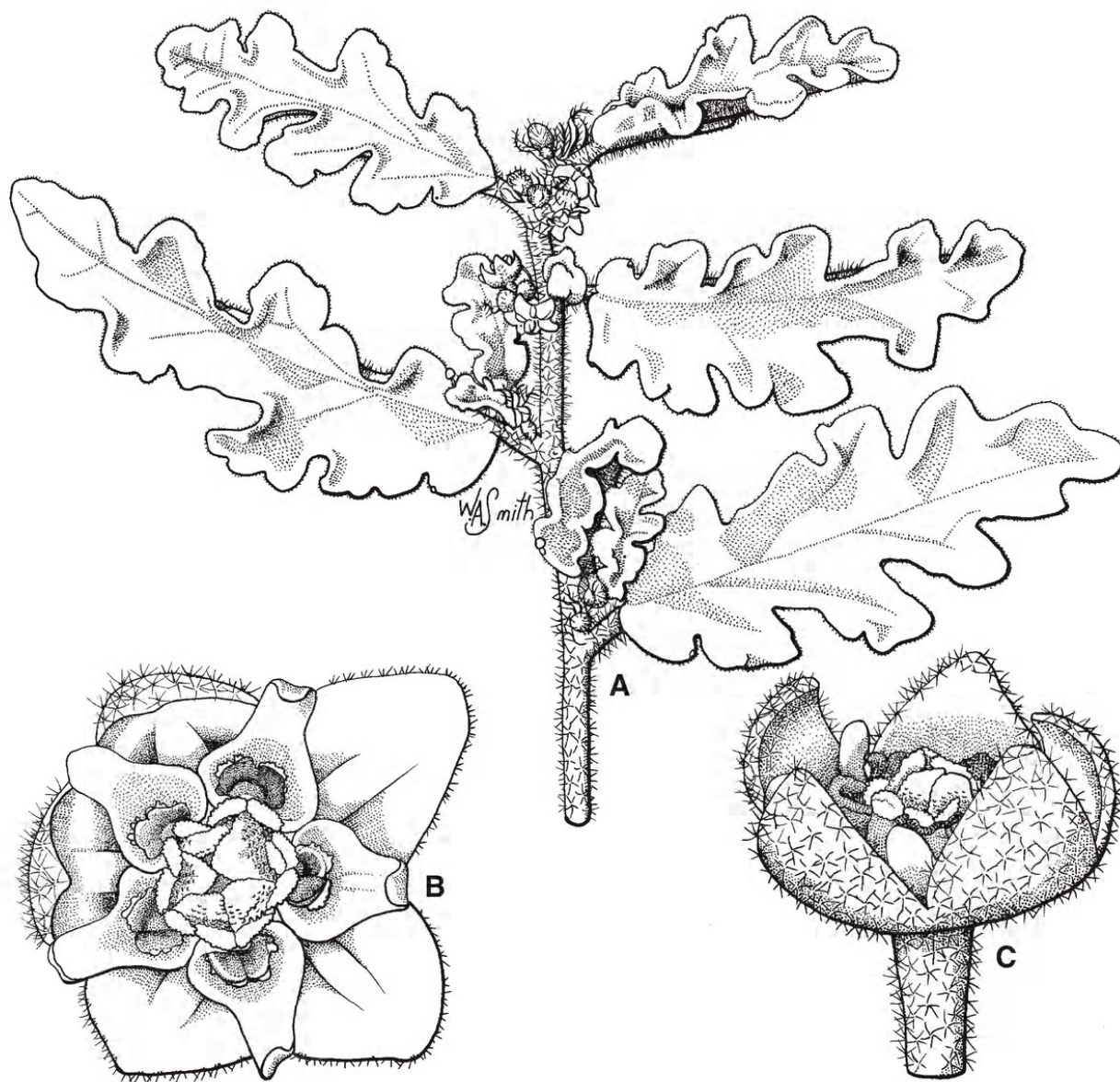


Fig. 6. *Commersonia pearnii*. A. flowering branchlet. $\times 1.5$. B. flower. $\times 16$. C. opening bud $\times 16$. All from Forster PIF30624 (BRI).

pubescent. Flowers white, cream to pale green, 4–5 mm diameter; pedicels 0.5–0.8 mm long. Calyx lobes triangular-ovate, 1.4–1.5 $\times$ 1.4–1.5 mm. Petals 1.3–1.5 $\times$ 1.1–1.2 mm wide; central lobes lingulate, 1.2–1.4 $\times$ 1.1–1.5 mm; lateral lobes rounded, 0.7–0.8 $\times$ 0.5–0.6 mm. Staminal tube 0.5–0.6 mm long; central staminodes triangular, glabrous inside, papillate outside, 1–1.1 $\times$ 0.5–0.7 mm wide; lateral staminodes filiform, corniculate, curved across central staminode, papillate, 0.4–0.5 $\times$ 0.1–0.13 mm. Ovary slightly 5-lobed, 0.7–0.8 mm diameter, glabrous or with rudimentary bristles; ovules 3–5 per loculus; styles coherent, c. 0.25 mm

long; stigmas free, globular, 0.07–0.1 mm diameter. Capsules and seeds not seen. **Fig. 6.**

Additional specimens examined: Queensland. LEICHHARDT DISTRICT: Blackdown Tableland, Sep 1981, Pearson 384 (BRI); Charlevue Lookout, on Loop Road, Blackdown Tableland N.P., 23° 44'S, 149° 02'E, Dec 1996, Johnstone 701 & Davies (BRI, NSW).

Distribution and habitat: *Commersonia pearnii* is known only from Blackdown Tableland and occurs in open-forest (to woodland) with a range of canopy species including *Eucalyptus cloeziana*, *E. melanoleuca*, *E. sphaerocarpa*, *E. suffulgens*, *E. baileyana*, *Corymbia bunites*, *C.*

hendersonii, *C. trachyphloia*, *Corymbia leichhardtii* and *C. citriodora* (RE 11.10.13). It occurs on sandstone scarps and tablelands with shallow soils formed from Cainozoic to Proterozoic consolidated, medium to coarse-grained sediments. The species is locally abundant over about one hectare at Charlevue Lookout (P. Forster, *pers. comm.*).

Phenology: Flowers have been collected in March, September and October.

Affinities: *Commersonia pearanii* is related to *C. leiperi* but differs from this species by its glaucous velutinous leaves with strongly undulated margins and 5–7 rounded or obtuse lobes, longer petioles (4–10 mm long) and its shorter peduncles (0.9–1.2 mm long).

Conservation status: *Commersonia pearanii* has a very restricted distribution being confined to Charlevue Lookout, Blackdown Tableland and the species is conserved in Blackdown Tableland N.P. Survey work is required to determine the species area of occupancy and population numbers.

Etymology: Named in honour of Professor John Pearn AM, RFD, KStJ, Professor of Paediatrics and Child Health at the University of Queensland, doctor, educator, humanitarian and author of medical and botanical works.

12. *Commersonia leiperi* Guymer, sp. nov.
affinis *C. pearanii* sed ab ea foliis aureo-fuscis stellato-pubescentia marginibus serratis paribus 6–7 dentium praeditis, petiolis brevioribus (1–2.5 mm longis) et pedunculis longioribus (3–8 mm longis) differt.

Typus: Queensland. WIDE BAY DISTRICT: State Forest 1294, 20 km SE of Childers, 1 February 1996, K.M. Sparshott KMS744 & R. Price (holo: BRI; iso: BRI).

Erect or prostrate shrub 0.2–1 m high, suckering from rhizomes; bark brown, lenticellate; branchlets golden stellate-pubescent (hairs 0.2–1.2 mm diameter). Leaves green, paler below; blades lanceolate, 1.5–11.5 × 0.4–1.6 cm; margins serrate, teeth 4–7 pairs, 0.5–4 mm long; bases truncate; apices acute or obtuse; golden brown pubescent above (hairs mid-dense, simple, biramous & stellate 0.4–1 mm diameter), stellate-

pubescent below (hairs 0.4–1 mm diam.); 3-veined at base, veins slightly impressed above, laterals and midrib raised below, lateral veins 4–5 pairs; petioles pubescent, 1–2.5 mm long. Stipules linear, 1.4–1.7 × 0.1–0.15 mm. Inflorescences cymose, 3–12-flowered; peduncles 3–8 mm long; bracts linear, 1–2 mm long; axes stellate-pubescent. Flowers white, pink in bud, 4.5–5.5 mm diameter; pedicels 1–4 mm long, pubescent (hairs stellate and glandular). Calyx pubescent outside (stellate hairs 0.2–0.4 mm diameter & red glandular hairs to 0.4 mm long), puberulous inside (hairs stellate & glandular); lobes ovate-acute, 1.5–1.6 × 1.3–1.4 mm. Petals 1.7–1.9 × 1.5–1.7 mm; central lobe ovate, 0.8–1.3 × 0.7–0.9 mm; lateral lobes rounded, 1.6–1.8 × 1.5–1.7 mm. Staminal tube 0.8–1 mm long; central staminodes ovate-acute, 0.8–0.9 × 0.5–0.6 mm, papillate outside and on margins, glabrous inside; lateral staminodes filiform, corniculate, curved in front of central staminode, 0.3–0.4 × 0.2–0.25 mm, papillate. Ovary slightly 5-lobed, 0.75–0.85 mm diameter, with rudimentary bristles; ovules 6 per loculus; styles coherent, 0.4–0.5 mm long; stigmas capitate, coherent, 0.12–0.15 mm diameter. Capsules and seeds not seen. **Fig. 7.**

Additional specimens examined: Queensland. WIDE BAY DISTRICT: S.F. 57, St Mary, 25° 40'S, 152° 25'E, Apr 1996, Forster PIF19113 (BRI); *loc. cit.*, 25° 40'S, 152° 24'E, Aug 1996, Forster PIF19501 (BRI, MEL); cult. Beenleigh (ex S.F. 57, St Mary), Mar 1997, *Leiper s.n.* (BRI [AQ654851]); Coonarr Creek, near Elliott River, c. 20 km SSE of Bundaberg, *s.dat.*, *s.coll.* (BRI); Wongi Forestry, Childers, Feb 1988, *Randall 502* (BRI);

Distribution and habitat: *Commersonia leiperi* is restricted to a single degree square from just south of Bundaberg to State Forest 57 St Mary, southwest of Maryborough, in south east Queensland. It has been recorded from woodlands and open forests of *Angophora leiocarpa*, *Eucalyptus cloeziana* and *E. acmenoides* in sandy soil (RE 12.9–10.21).

Phenology: Flowers have been collected in February and April.

Affinities: *Commersonia leiperi* is related to *C. pearanii* but differs from that species by its golden brown stellate-pubescent leaves, serrate leaf margins with 6–7 teeth, shorter petioles (1–2.5 mm long) and its longer peduncles (3–8 mm long).

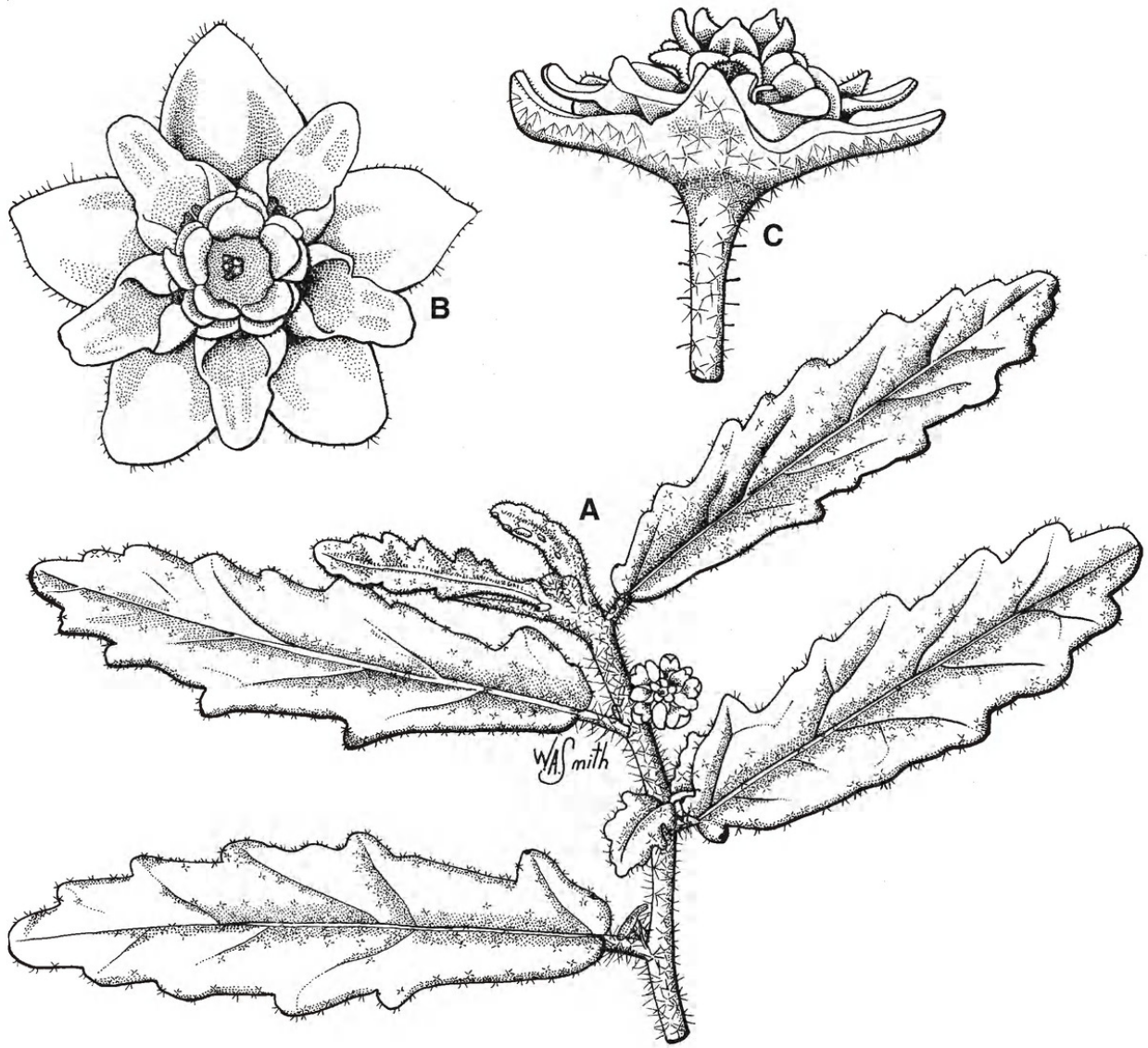


Fig. 7. *Commersonia leiperi*. A. flowering branchlet. $\times 2$. B. flower from above. $\times 10$. C. flower from the side. $\times 10$. All from *Leiper s.n.* (BRI [AQ654851]).

Conservation status: *Commersonia leiperi* has a restricted distribution of less than 100 km but has significant populations conserved in State Forests. The species requires detailed survey to determine the area of occupancy and number of individuals.

Etymology: This species is named in honour of Glenn Leiper, educator, amateur botanist, photographer and author. Glenn originally discovered this species in State Forest 57 St Mary and has cultivated and flowered it at Beenleigh enabling illustration of the flowers.

13. *Commersonia leichhardtii* Benth., *Fl. Austral.* 1: 242–243 (1863). **Type: Queensland: Head of the Boyd river, 29 January 1847, *Leichhardt* 574 (lecto [here chosen]: MEL 236401).**

Shrubs 0.2–0.5 m tall, suckering from rhizomes; branchlets golden-brown stellate-pubescent (hairs 0.4–1.2 mm diameter), glabrescent. Leaves green or slightly silvery, discolorous; blades ovate to lanceolate, occasionally lower leaves shallowly 3-lobed, 3.5–8.5 $\times$ 1–3 cm; margins crenate, teeth 7–22 pairs, to 2 mm long; bases

truncate or slightly cordate; apices obtuse; stellate pubescent above (hairs 0.4–1 mm diameter) and below (hairs 0.6–1.8 mm diameter); 5-veined at the base, midvein and lateral veins impressed above, raised below, lateral veins 5–7 pairs; petioles 4–12 (–14) mm long, stellate-pubescent. Stipules narrowly triangular, 3–12.8 × 0.8–1 mm, deciduous, stellate-pubescent. Inflorescences 3–5-flowered, 1.5–2 mm long; peduncles 5–6 mm long; axes stellate-pubescent (hairs 0.0.6–1.4 mm diameter); bracts narrowly triangular, 5–8 × 0.2–0.3 mm long, stellate-pubescent. Flowers yellow, 12–15 mm diameter; pedicels 1–1.8 mm long. Calyces 9–10 mm long, stellate-pubescent outside (hairs 0.4–1.8 mm diameter); lobes ovate-triangular, 5–6.5 × 4–6 mm, pubescent inside (hairs stellate & simple). Petals 4.5–5 mm long; central lobe ovate, 2.3–2.5 × 1.2–1.4 mm; lateral lobes rounded, 1–1.2 × 1–1.8 mm. Staminal tube 0.8–1 mm long; central staminodes triangular, caudate, 2.5–4 × 1–1.5 mm; laterals erect, corniculate, smooth, 0.5–0.9 × 0.2–0.25 mm. Ovary slightly 5-lobed, 1–1.3 mm diameter, and with rudimentary bristles; ovules 10–12 per loculus; styles 0.7–1 mm long, free; stigmas clavate, free, 0.2–0.3 mm diameter. Capsules and seeds not seen.

Additional specimens examined: **Queensland.** LEICHHARDT DISTRICT: Head of Boyd River [Creek], Jan 1847, *Leichhardt s.n.* (K). BURNETT DISTRICT: Gorge, Oaky L.A., Coomingleh S.F., NW of Monto, Mar 1996, *Bean 10147* (BRI, MEL); *loc. cit.*, Jun 1996, *Bean 10414* (BRI). DARLING DOWNS DISTRICT: Turkey Mt, Barakula S.F. 302, Nov 1987, *Forster PIF15173* (BRI); Barakula S.F. 302, Sep 1996, *Forster PIF19627 & Ryan* (BRI); Turkey Mt track, Barakula S.F., Nov 1984, *R. Hando 370* (BRI); Turkey Mt fire lookout, Barakula S.F., *V. Hando 379* (BRI); *loc. cit.*, May 1985, *V. Hando 380* (BRI).

Distribution and habitat: *Commersonia leichhardtii* is confined to central Queensland from Boyd Creek, west of Taroom to Barakula State Forest, near Chinchilla. It occurs in woodlands or open forests of *Corymbia citriodora*, *Eucalyptus crebra* and *E. acmenoides* on sandstone ridges or stony hillsides (RE 11.7.6).

Phenology: Flowers have been collected in March, June and November.

Typification: The type citation for this name states “Head of Boyd river, *Leichhardt*, in *Herb. F. Muell.*”. Although an unnumbered collection

of Leichhardt’s was retained at Kew, the numbered specimen in MEL is superior in quality and is used to typify the name.

14. *Commersonia pedleyi* Guymmer sp. nov.
affinis *C. leiperi* et *C. pearonii* sed ab iis floribus roseis 6–7 mm diam., ovulis 10 per loculum, foliorum marginibus loborum partibus 5–16 praeditis, differt.

Typus: Queensland. DARLING DOWNS DISTRICT: 13 miles [21.7 km] W of Westmar, 19 October 1959, *L. Pedley 518* (holo: BRI; iso: BRI, AD, K, MEL, NSW).

Rulingia sp. 1 (Stanley & Ross 1986).

Rulingia sp. (Westmar L. Pedley 518) (Guymmer 2002).

Low spreading or prostrate shrub to 60 cm tall, 20–150 cm across, suckering from rhizomes; branchlets golden pubescent, glabrescent. Leaves dull green, paler below; blades usually linear-lanceolate to lanceolate, 3-lobed, occasionally ovate and palmate, 2–7 × 0.4–4 cm; margins lobed, lobes 5–16 pairs, 1–4 mm long; bases truncate, cordate, occasionally oblique; apices obtuse or rounded; sparsely pubescent above (hairs simple 0.1–0.3, glandular and stellate 0.3–0.5 mm diameter), stellate pubescent below (hairs mid-dense, 0.2–0.8 mm diameter); 3-veined at base, midvein and lateral veins impressed above, veins raised below, lateral veins 4–9 pairs; petioles 2–5 mm long, stellate-pubescent. Stipules narrowly triangular, 2–5 mm long, stellate-pubescent. Inflorescences 7–10-flowered, 10–23 mm long; peduncles 4–5 mm long; bracts linear, 2–9 mm long; axes stellate-pubescent. Flowers at first white, later becoming pink, 6–7 mm diameter; pedicels 1–3 (–9) mm long. Calyces 4–6.5 mm long, stellate pubescent outside, pubescent inside (hairs stellate, simple and glandular); lobes ovate-acute, 3–3.5 × 2.5–3.2 mm. Petals 4–5.5 mm long; central lobes linear-lanceolate, 2.7–4.5 mm long, apex rounded, 0.3–0.45 mm wide, *c.* 0.5 mm wide at base; basal lobes rounded, 0.7–1 mm long. Staminal tube 1.2–1.4 mm long; central staminodes narrowly triangular, caudate, reflexed, 4.3–4.6 × 0.8–1 mm; lateral staminodes present or absent, filiform, erect, 0.35–0.5 mm long, papillate. Ovary 5-lobed, 1.2–1.3 mm diameter, with rudimentary bristles and stellate

hairs; ovules 9–10 per loculus; styles free, 0.5–0.6 mm long; stigmas 0.1–0.16 mm diameter. Capsules 9–12 mm diameter, with 5 papery protruding upper wings (along sutures) 1.5–2 mm long, bristles slightly crinkled, 1–2.3 mm long with simple and stellate hairs; seeds 4 or 5 per loculus, ovoid, 2–2.4 × 1–1.5 mm, tuberculate, black; strophiole 1–1.8 mm long, fawn. **Fig. 8.**

Additional specimens examined: Queensland.

MARANOA DISTRICT: 80 km E of St George, Apr 1984, *Ballingall 1370* (BRI); 44 miles [73.3 km] NE of St George, Aug 1956, *Everist 5832* (BRI); Megine to Brucedale road, c. 40 km S of Roma, Sep 1995, *Grimshaw PG2171* (BRI); St George – Bollon road, Sep 1983, *Jahnke s.n.* (BRI [AQ398475]); 56 km NNW of Talwood, Feb 1968, *McDonald 375* (BRI); 3 km E of Yuleba, Oct 1973, *s.coll.* (BRI [AQ11346]). DARLING DOWNS DISTRICT: 1.6 km S of Miles, Mar 1994, *Bean 7582* (BRI); 18.2 km W of Westmar, Moonie Highway, Oct 1984, *Forster PIF1918* (BRI); Miles, Mar 1950, *Gordon DMG155* (BRI); 19.9 km W of Westmar, Sep 2005, *Halford Q8584 & Thomas* (BRI); c. 24 km W of Westmar, Sep 2005, *Halford Q8586 & Thomas* (BRI); Gurulmundi, near Miles, Sep 1977, *Hando s.n.* (BRI [AQ264195]); Main Range, near Gurulmundi, Nov 1930, *Hubbard 5111* (BRI, K); Moonie, Dec 1970, *Pedersen CO4* (BRI); Main Range, 3 miles [5 km] W of Gurulmundi, Sep 1961, *Pedley 879* (BRI); 5 km W of Gurulmundi, Jan 1984, *Pedley 5029* (BRI); 10 km from Gurulmundi on Woleebee road, Aug 1977, *Ross s.n.* (BRI [AQ228855]); Glenmorgan, Oct 1969, *Smith s.n.* (BRI [AQ377200, 377339]); 17 km W of Westmar, Sep 1988, *Thomas s.n.* (BRI [AQ477366]); 16 km W of Gurulmundi on Woleebee road, Oct 1973, *Williams 75043* (BRI).

Distribution and habitat: *Commersonia pedleyi* has a distributional range of 160 km from Gurulmundi, north of Miles in the western Darling Downs District, to west of St George, in the eastern Maranoa District, southern Queensland. It occurs in heathlands, woodlands, open forests and along roadsides and is found on sandy soils, red lateritic earths, sand ridges and brown loams.

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

Affinities: *Commersonia pedleyi* is allied to *C. leiperi* and *C. pearonii* but differs from those species by its pink flowers 6–7 mm diameter, its 10 ovules per loculus and its leaf margins with 5–16 pairs of lobes.

Conservation status: The species has a wide range of occurrence (160 km) and is conserved in the National Park estate. It is not considered to be risk.

Etymology: Named in honour of Leslie Pedley, botanist and formerly Assistant Director at the Queensland Herbarium, who made extensive collections of the species (including the type) and who first recognised this species was unique and new to science.

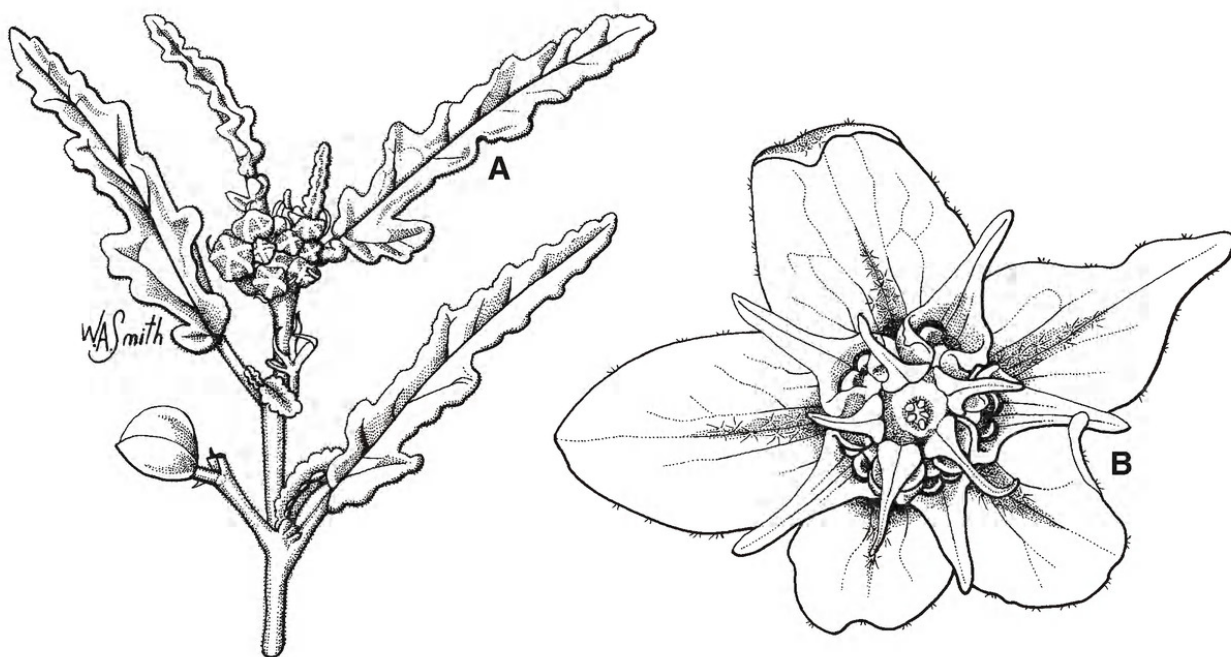


Fig. 8. *Commersonia pedleyi*. A. flowering branchlet. × 2. B. flower. × 8. All from *Forster PIF1918* (BRI).

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