

New species of *Philotheca* Rudge (Rutaceae) from Queensland

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Summary

Forster, P.I. (2005). New species of *Philotheca* Rudge (Rutaceae) from Queensland. *Austrobaileya* 7(1): 175–181. Taxa previously allocated subspecies rank under *Philotheca myoporoides* are elevated to species rank as *P. conduplicata* (Paul G. Wilson) P.I.Forst., *P. epilosa* (Paul G. Wilson) P.I.Forst., *P. glasshousiensis* (Domin) P.I.Forst., *P. obovatifolia* (Bayly) P.I.Forst. and *P. queenslandica* (C.T.White) P.I.Forst. Diagnostic descriptions and a key are provided to the Queensland species of *Philotheca* section *Erionema* (F.Muell.) Paul G. Wilson.

Key Words: Rutaceae, taxonomy, *Philotheca conduplicata*, *Philotheca epilosa*, *Philotheca glasshousiensis*, *Philotheca myoporoides*, *Philotheca obovatifolia*, *Philotheca queenslandica*, Queensland flora

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Introduction

The genus *Philotheca* Rudge with c. 50 species is endemic to Australia and was last revised by Bayly (1998) and Wilson (1998a). Six species of *Philotheca* in the two sections *P.* section *Philotheca* and *P.* section *Erionema* (F.Muell.) Paul G. Wilson have been recognised for Queensland (Wilson 1998a). *Philotheca acrolopha* Paul G. Wilson, *P. ciliata* Hook., *P. cuticularis* Paul G. Wilson, *P. difformis* (A.Cunn. ex Endl.) Paul G. Wilson and *P. sporadica* (Bayly) Paul G. Wilson belong to *P.* section *Philotheca* and *P. myoporoides* s.lat. to *P.* section *Erionema*.

Philotheca myoporoides (DC.) Bayly s.lat. was revised by Bayly (1998) who recognised one species with nine subspecies distributed in eastern Australia. Four of these subspecies are found in south-eastern Queensland. The rank at which taxa in *P. myoporoides* s.lat. have been recognised is based on the pioneering work of Wilson (1970) when he first revised the group (then part of *Eriostemon*). Wilson (1970) adopted a broad species concept of complex species with numerous phenetically defined subspecies in the genera *Eriostemon* and *Phebalium*. In recent times, recognition at species rank of some of these subspecific taxa, or other new taxa that might also have been named as subspecies when using the concepts of Wilson (1970,

1998a,b), has occurred in the genera *Leionema*, *Phebalium* and *Philotheca* (e.g. Rozefelds 2001; Forster 2003; Horton *et al.* 2004; Walsh 2004; Weston & Turton 2004). Bayly (1998) stated “for the most part, taxa in the *Philotheca myoporoides* complex are both morphologically and geographically distinct.....most taxa overlap on a number of these features, and each is largely defined by some unique combination of attributes”.

As noted elsewhere (Forster 2005), it is considered that plant species can be defined as groups of populations (1-many) with discontinuities in the variation of two or more independent character states of morphology. It is assumed that there is genetic continuity or at least a shared ancestral lineage between the different populations of a single species, albeit in most cases in the absence of non-morphological data. Specific taxa defined in this manner are in the sense of the ‘phenetic species concept’ (Stebbins 1950; van Steenis 1957; Levin 1979, 2000; Cronquist 1988; Stuessy 1990). If only a single, or several minor (e.g. indumentum colour or density) character state differences are present and the discontinuity is geographically based, the rank of subspecies is often used. Subspecies should differ in only a few minor characters and *intermediate populations should exist to demonstrate continuity of character states* (e.g. Stebbins (1950) states “subspecies.... connected by a series of intergrading forms” or Stace (1989)

states “a population of several biotypes forming a more or less distinct regional facies of a species a geographical race, ecotype, topodeme or genoecodeme”).

Neither Wilson (1970) nor Bayly (1998) have demonstrated that intermediate populations exist for the four subspecies of *P. myoporoides* s.lat. that occur in Queensland, either between the four subspecies, or between them and other subspecies in the superspecies. Weston & Harden’s (2002) statement that “intergrades [are] known between taxa where they grow together” appears to not be based on any published data and may derive from Wilson’s (1970) observation that there were “distinct morphological groups which occupy separate geographical areas (except at one point where two of them may overlap)”. There are clear differences between the four subspecies based on habit, stem, leaf and staminal filament characters. Recognition of these four

Queensland taxa at species rank is expedited here to enable use of the names in a forthcoming census of the Queensland flora. Two of the taxa have been previously recognised at species level in the genus *Eriostemon* (Domin 1926; White 1942). Revision of the remaining subspecies of *P. myoporoides* s.lat. in the states of New South Wales and Victoria is left in abeyance for workers familiar with the relevant taxa.

Materials and methods

The results in this paper are based on the examination of herbarium material at BRI, MEL and NSW. All taxa have been studied in the field. Although descriptions of the individual taxa can be sourced in Wilson (1970) and Bayly (1998); new, concise descriptions are provided below to assist in identification of the Queensland taxa.

Taxonomy

Key to the Queensland species of *Philotheca* section *Erionema* (F.Muell.) Paul G. Wilson

1. Stems sparsely to densely warty-verrucose 2
 Stems more or less smooth, or with only scattered, slightly raised glands 4
2. Leaves strongly concave when dry; staminal filaments eciliate or with only
 scattered long hairs towards the apex **P. epilosa**
 Leaves \pm flat or weakly concave when dry; staminal filaments ciliate for
 entire length and with dense long hairs towards the apex 3
3. Stems densely glandular-verrucose; leaves oblanceolate to oblong, 20–52
 mm long \times 5–11 mm wide, length/width ratio 3–5.7 **P. glasshousiensis**
 Stems sparsely glandular-verrucose; leaves obovate, 28–60 mm long \times
 (11–)15–28 mm wide, length/width ratio 2.2–3.3 **P. obovatifolia**
4. Leaves elliptic, falcate and strongly conduplicate when dry, 30–65 mm long;
 petals 7–11 mm long; capsules 7–9 mm long **P. conduplicata**
 Leaves narrow-elliptic to narrow-obovate, flat when dry, 7–30 mm long;
 petals 5–8 mm long; capsules 5–7 mm long **P. queenslandica**

New Combinations

Philotheca conduplicata (Paul G. Wilson)
 P.I.Forst. **comb. & stat. nov.**; *Eriostemon*
myoporoides subsp. *conduplicata* Paul
 G. Wilson, *Nuytsia* 1: 41 (1970); *Philotheca*
myoporoides subsp. *conduplicata* (Paul
 G. Wilson) Bayly, *Muelleria* 11: 124 (1998).

Type: New South Wales. Howell, August
 1905, J.H. Maiden & J.L. Boorman s.n.
 (holo: NSW68742).

Illustrations: Williams (1984: 127), as
Eriostemon myoporoides subsp.

conduplicatus; Bayly (1998: 114, fig. 1D) & Weston & Harden (2002: 297), as *Philotheca myoporoides* subsp. *conduplicata*.

Woody shrub to 2 m high; rootstock not rhizomatous. Branchlets \pm smooth or with only scattered glands. Leaves laxly clustered near stem apices; leaf laminae narrow-elliptic, conduplicate and falcate when dry, 40–75 mm long, 6–14 mm wide, length/width ratio 4–10.4; apex obtuse to acute, mucronate; base attenuate. Inflorescences pedunculate to 4 mm, with 1–4 flowers; pedicels 2–4.5 mm long, sparsely to densely glandular-verrucose. Petals elliptic-oblong to oblanceolate, 6–11 mm long, 2.5–3.5 mm wide, adaxially papillose, abaxially glabrous apart from scattered to dense, verrucose glands in the middle towards the apex, cream, sometimes with a pink tinge. Staminal filaments sparsely ciliate for entire length, apex sparsely pilose with hairs to 0.5 mm long. Cocci erect, prominently rostrate, 7–9 mm long.

Selected specimens examined: Queensland. DARLING DOWNS DISTRICT: Glen Aplin, Jul 1949, *Althofer s.n.* (BRI [AQ151760]); Wyberba, Dec 1962, *Blake 22003* (BRI); near Wallangarra, Nov 1944, *Clemens s.n.* (BRI [AQ151759]); near Ballandean, Oct 1944, *Clemens s.n.* (BRI [AQ151763]); 3.3 km SE of Glen Aplin, Sep 1974, *Gittins 2793* (BRI); Daphne Peak, Braemar, Glen Aplin, Sep 1963, *Gordon 6404* (BRI); ridge S of Bald Mt, extreme W section of Girraween N.P., 28° 52'S, 151° 54'E, Sep 1994, *Grimshaw PG970 & Turpin* (BRI, NSW); 18 km SW of Stanthorpe, Portion 89, Nundubbermere Road, 28° 43'S, 151° 45'E, Oct 1994, *Halford Q2291* (BRI); Red Rock Gorge, Sundown N.P., Aug 1983, *Haselgrove SD57* (BRI); Fletcher, Mt Pleasant Fauna Sanctuary, Aug 1964, *Philp s.n.* (BRI [AQ151758]); Ballandean, Oct 1933, *White 9401* (BRI). **New South Wales.** Northern slopes of Bald Knob, 10 km W of Woodenburg, 28° 22'S, 152° 32'E, Sep 1998, *Bean 13795* (BRI, NSW); WNW of Glen Innes via Wellingrove, Kings Plains N.P., 29° 34'S, 151° 22'E, *Coveny 16604 & Whalen* (BRI, NSW); Jonquil Knob, Torrington State Recreation area, off Duck Creek trail, 29° 11'S, 151° 32'E, Jul 2001, *Forster PIF27435* (BRI, MEL, NSW); Torrington, 29° 19'S, 151° 42'E, Oct 1969, *Jones 4115* (BRI).

Distribution and habitat: *Philotheca conduplicata* is endemic to the Granite Belt of south-east Queensland (Girraween N.P., Sundown N.P., Ballandean, Glen Aplin) and adjacent north-east New South Wales (Bald Knob, Kings Plains N.P., Torrington). Plants grow in rocky areas on granite substrates at altitudes between 700 and 900 m.

Notes: *Philotheca conduplicata* is distinctive in a combination of characters, viz. the leaves are laxly clustered at the stem apices and the laminae are narrow-elliptic, falcate and strongly conduplicate when dry. It is also the tallest of this group of Queensland species, with individuals up to 2 m observed.

Philotheca epilosa (Paul G. Wilson) P.I. Forst. **comb. & stat. nov.**; *Eriostemon myoporoides* subsp. *epilosus* Paul G. Wilson, *Nuytsia* 1: 41 (1970); *Philotheca myoporoides* subsp. *epilosa* (Paul G. Wilson) Bayly, *Muelleria* 11: 120 (1998). **Type:** Queensland. DARLING DOWNS DISTRICT: Wallangarra, November 1906, *S.L. Boorman s.n.* (holo: NSW69255; iso: NSW68741).

Illustrations: Ross (1983: 466, fig. 71J) & Williams (1987: 119), as *Eriostemon myoporoides* subsp. *epilosus*; Bayly (1998: 114, fig. 1B) & Weston & Harden (2002: 296) as *Philotheca myoporoides* subsp. *epilosa*.

Woody subshrub to 1 m high; rootstock not rhizomatous. Branchlets densely glandular-verrucose. Leaves densely clustered near stem apices; leaf laminae obovate to oblanceolate, strongly concave when dry, 4–25 mm long, 2.2–8 mm wide, length/width 1.6–4.2; apex obtuse to rounded, strongly mucronate; base cuneate to truncate. Inflorescences pedunculate to 3 mm, with a solitary flower; pedicels 2–5 mm long, densely glandular-verrucose. Petals elliptic-oblong to obovate, 5–8 mm long, 2–3.5 mm wide, adaxially papillose, abaxially glabrous apart from scattered, verrucose glands in the middle towards the apex, cream, often tinged pink. Staminal filaments eciliate or only with scattered cilia for entire length, apex epilose or with only a few scattered hairs to 0.2 mm long. Cocci erect, prominently rostrate, 5–7 mm long.

Selected specimens examined: Queensland. DARLING DOWNS DISTRICT: Wallangarra, Nov 1973, *Abell s.n.* (BRI [AQ13990]); Upper reaches of Bald Rock Creek, Girraween N.P., Sep 1993, *Bean 6369 & Forster* (BRI); Portion 90, Wyberba, near Girraween N.P., 28° 50'S, 151° 54'E, Sep 1993, *Bean 6383 & Forster* (BRI); Girraween N.P., Nov 1971, *Blake 23658* (BRI); Amiens, Nov 1956, *Bowen s.n.* (BRI [AQ151773]); Summit of Mt Norman, Wallangarra, Nov 1944, *Clemens 44562* (BRI); Signboard Mt, Girraween N.P., 28° 49'S, 151°

58°E, Aug 1995, *Forster PIF17582 & Figg* (BRI); Wyberba, 1961, *Hockings s.n.* (BRI [AQ151769]); Portion 125 Broadwater, N side of Girraween N.P., Aug 1974, *McDonald 264* (BRI); Stanthorpe, *s.dat.*, *Macpherson s.n.* (BRI [AQ151772]); Amiens, at foot of "Sow & Pigs", Oct 1963, *Pedley 1485* (BRI); Property of W. McDonagh, Lyra, Oct 1962, *Shea S118* (BRI); Stanthorpe, Aug 1930, *Westcott 12* (BRI). **New South Wales.** Boonoo Boonoo N.P., NE of Tenterfield, near Boonoo Boonoo River, 28° 51'S, 152° 08'E, Sep 2001, *Copeland 3182* (BRI, MEL, NSW); 29 km N of Tenterfield off the Mt Lindesay Highway, Bungoona track to summit, Bald Rock N.P., 28° 51'S, 152° 02'E, Oct 1993, *Coveny 16563 & Whalen* (BRI, NSW); Bald Rock, Bald Rock N.P., 28° 51'S, 152° 02'E, May 1995, *Hunter 3202* (BRI, NE); 4 miles [6.4 km] NNE of Boonoo Boonoo, 28° 53'S, 152° 08'E, Dec 1971, *Thurtell 3896 & Coveny* (BRI, NSW); Basket Swamp, 25 km by road NNE of Tenterfield, Boonoo S.F., 28° 54'S 152° 09'E, Oct 1992, *Wilson 8507* (BRI, NSW).

Distribution and habitat: *Philotheca epilosa* is endemic to the Granite Belt of south-east Queensland (Girraween N.P., Amiens, Stanthorpe) and adjacent north-east New South Wales (Boonoo Boonoo, Bald Rock N.P. Plants grow in open areas of rock slabs and pavements on granite substrates at altitudes between 800 and 1100 m.

Notes: *Philotheca epilosa* is almost sympatric with *P. conduplicata* in Girraween National Park near Wyberba; however, I know of no instances where both taxa have been collected from the same locality. Despite this near geographical proximity of the two taxa, there are no specimens that indicate introgression or hybrid individuals. The absence of intermediates was first noted by Wilson (1970), *viz.* "no herbarium specimens showing any suggestion of integradation between the two". *Philotheca epilosa* is distinctive in the small obovate to oblanceolate leaf laminae that dry strongly concave and the staminal filaments that are eciliate or with only scattered cilia towards the apex.

***Philotheca glasshousiensis* (Domin) P.I. Forst. comb. nov.;** *Eriostemon glasshousiensis* Domin, *Biblioth. Bot.* 89: 286 (1926). **Type:** Queensland. MORETON DISTRICT: Glasshouse Mountains, slopes of Mt Coonowrin, September 1909, *C.T. White s.n.* (holo: PR?, *n.v.*; iso: BRI [AQ314418]).

Eriostemon trachyphyllus var. *leichhardtii* Benth., *Fl. Austral.* 1: 333 (1863); *E. myoporoides* subsp. *leichhardtii* (Benth.) Paul G. Wilson, *Nuytsia* 1: 41 (1970); *Philotheca myoporoides* subsp. *leichhardtii* (Benth.) Bayly, *Muelleria* 11: 124 (1998). **Type:** Brroa [= Mt Beerwah, Glasshouse Mountains], *L. Leichhardt* (holo: K *n.v.* *fide* Wilson (1970: 41); iso: MEL4536).

Illustration: Bayly (1998: 114, fig. 1c), as *Philotheca myoporoides* subsp. *leichhardtii*.

Woody subshrub to 1 m high; rootstock not rhizomatous. Branchlets densely glandular-verrucose. Leaves densely clustered near stem apices; leaf laminae oblanceolate to oblong-obcuneate, \pm flat or somewhat incurved when dry, 20–52 mm long, 5–11 mm wide, length/width ratio of 3–5.7; apex rounded to truncate, abruptly apiculate; base cuneate. Inflorescences pedunculate to 5 mm; with 1–4 flowers; pedicels 4–12 mm long, scattered glandular-verrucose. Petals elliptic-oblong, 6–8.5 mm long, 2.5–3 mm wide, adaxially papillose, abaxially glabrous or with scattered, verrucose glands in the middle towards the apex, cream. Staminal filaments woolly ciliate for entire length, apex densely long-pilose with hairs to 1.5 mm long. Cocci erect, prominently rostrate, 7–11 mm long.

Selected specimens examined: Queensland. PORT CURTIS DISTRICT: S.F. 316, Kroombit Tops, 24° 21'S, 150° 56'E, Feb 1995, *Forster PIF16249* (BRI, K, NSW); Kroombit Tops Forest Reserve, 24° 21'S, 150° 56'E, Nov 2003, *Forster PIF29772* (BRI, HO, MEL); S.F. 316, Kroombit Tops, 51 km SSW of Calliope, 24° 25'S, 150° 56'E, May 1988, *Gibson TOI1147* (BRI); ridge to N of Kroombit Creek, c. 6 km SSW of Forestry Barracks, Kroombit Tops S.F., 24° 25'S, 150° 57'E, Dec 1983, *McDonald 3865* (BRI, NSW). BURNETT DISTRICT: Cania Gorge, May 1977, *Olsen 3538 & Byrnes* (BRI); Cania Gorge, c. 26 km NW of Monto, Aug 1980, *Sharpe 2620* (BRI). WIDE BAY DISTRICT: Mt Cooroora, S.F. 963, 2 km W of Pomona, 26° 22'S, 152° 50'E, Sep 1996, *Bean 10746* (BRI, MEL); Mt Cooroora, Pomona, 26° 22'S, 152° 50'E, Feb 1995, *Forster PIF16121* (BRI, MEL); *loc. cit.*, Oct 1999, *Forster PIF24972 & Booth* (BRI, MEL). MORETON DISTRICT: top of Glasshouses, Jul 1879, *Bailey s.n.* (BRI [AQ151787]); Mt Beerwah N.P., 26° 54'S, 152° 53'E, Aug 1990, *Bean 2150* (BRI); Mt Tibrogargan N.P., 26° 56'S, 152° 57'E, Apr 1993, *Bean 5911* (BRI); 1 km NNE of Mt Tibrogargan, N of Beerburum, 26° 55'S, 152° 57'E, Feb 1997, *Bean 11666* (BRI); near

top of Mt Ngungun, Jun 1951, *Blake 18765* (BRI); Mt Beerwah, Aug 1966, *Blake 22761* (BRI); Mt Coonowrin, 26° 54'S, 152° 55'E, Jun 1968, *Smith 13967* (BRI); Coochin Hills, east peak, 26° 52'S, 152° 56'E, Aug 1968, *Smith 14035* (BRI); Coochin Hills, near summit of W peak on N side, 26° 52'S, 152° 56'E, Aug 1968, *Smith 14046* (BRI); Glasshouses, Coonoorin (Crookneck) Peak, Aug 1968, *Webster 14990 & Hildreth* (BRI); (BRI); Top of Mt Ngungun, Glasshouse Mountains, Mar 1931, *White 7648* (BRI).

Distribution and habitat: *Philotheca glasshousiensis* is endemic to south-eastern Queensland where it occurs in disjunct populations with a northern limit at Kroombit Tops and a southern limit in the Glasshouse Mountains. Plants occur in small, scattered populations on rocky outcrops and cliffines on substrates derived from metamorphosed sandstones, rhyolite and trachyte at altitudes between 100 and 900m.

Notes: This species occurs in close geographical proximity to *P. queenslandica* but is not "broadly sympatric" with that taxon as stated by Bayly (1998). As noted by Bayly (1998) [there are] "no specimens that could not be readily assigned to one taxon or the other". *Philotheca queenslandica* and *P. glasshousiensis* do not show any evidence of introgression; hence, the observed variation does not fulfil the criteria necessary for them to be allocated subspecies rank.

Philotheca glasshousiensis is perhaps more closely related to *P. obovatifolia* and both share the character of staminal filaments that are ciliate for the entire length. However, it differs from that species by having smaller (20–52 × 5–11 mm) leaves that are oblanceolate to oblong-obcuneate with a length/width ratio of 3–5.7, and the staminal filaments have long-pilose hairs towards the apex. In comparison *P. obovatifolia* has broadly obovate leaves that are noticeably larger (28–60 × (11–) 15–28 mm) with a length/width ratio of 2.2–3.3, and staminal filaments with only a few scattered hairs towards the apex.

Philotheca obovatifolia (Bayly) P.I.Forst. **stat. nov.**; *Philotheca myoporoides* subsp. *obovatifolia* Bayly, *Muelleria* 11: 123 (1998). **Type:** Queensland. MORETON DISTRICT: Mt Ernest, 10 November 1992, *P.I.Forster PIF12364 & G. Leiper* (holo: BRI; iso: MEL).

Illustrations: Bayly (1998: 114, fig. 4), Logan River Branch S.G.A.P. (Qld Region Inc.) (2002: 323) & Weston & Harden (2002: 296), as *Philotheca myoporoides* subsp. *obovatifolia*.

Woody subshrub to 1 m high; rootstock not rhizomatous. Branchlets sparsely glandular-verrucose. Leaves densely clustered near stem apices; leaf laminae broadly obovate, ± flat, 28–60 mm long, (11–) 15–28 mm wide, length/width ratio of 2.2–3.3; apex obtuse to slightly retuse, shortly mucronate; base cuneate to truncate. Inflorescences pedunculate to 9 mm, with 1–5 flowers; pedicels 5–9 mm long, sparsely glandular-verrucose. Petals elliptic-oblong, 8–9 mm long, 3.5–4 mm wide, adaxially papillose, abaxially glabrous, apart from scattered verrucose glands in the middle towards the apex, cream, tinged with pink. Staminal filaments ciliate for entire length, apex with scattered, longer hairs to 1 mm long. Cocci not seen.

Additional specimens examined: Queensland. MORETON DISTRICT: Mt Barney, near saddle, 28° 17'S, 152° 42'E, Jun 1972, *Bell 538* (BRI); Mt Barney, Oct 1935, *Everist 1390* (BRI); *loc. cit.*, Sep 1949, *Everist 4137* (BRI); Mt Barney, upper slopes SE ridge of East Peak, 28° 17'S, 152° 41'E, Sep 1994, *Forster PIF15720* (BRI, CANB, K, NSW); Mt Barney, summit area East Peak, 28° 17'S, 152° 41'E, Sep 1994, *Forster PIF15722* (AD, BRI); Mt Barney, Dec 1974, *McDonald s.n.* (BRI [AQ151747]); Mt Lindesay, Jul 1934, *Michael 2067* (BRI); *loc. cit.*, Jul 1935, *Michael 2218* (BRI); Mt Barney, Aug 1931, *White 7829* (BRI). New South Wales. Werrikimbe N.P., Mt Werrikimbe summit, 31° 13', 152° 13'E, Aug 1998, *Copeland 1042* (BRI, NE).

Distribution and habitat: *Philotheca obovatifolia* is endemic to the extreme south-east of Queensland (Mt Barney, Mt Ernest, Mt Lindesay) and Mt Werrikimbe in north-east New South Wales. Plants occur in montane (800–1300 m) heathland, shrubland or woodland on rocky substrates derived from granite (Mt Werrikimbe) or rhyolite (Mt Barney, Mt Ernest). The species appears to be extinct on Mt Lindesay as it has not been sighted or collected there in the last 20 years despite extensive searches.

Notes: *Philotheca obovatifolia* is a very distinctive, large leaved taxon in this species complex. The single collection from Mt Werrikimbe has stems that are only weakly glandular-verrucose.

Philotheca queenslandica (C.T.White) P.I.Forst. **comb. nov.**; *Eriostemon queenslandicus* C.T.White, *Proc. Roy. Soc. Queensland* 53: 207 (1942); *Eriostemon myoporoides* subsp. *queenslandicus* (C.T.White) Paul G Wilson, *Nuytsia* 1: 41 (1970); *Philotheca myoporoides* subsp. *queenslandica* (C.T.White) Bayly, *Muelleria* 11: 125 (1998). **Type:** Queensland. MORETON DISTRICT: Caloundra, 23 August 1933, S.L. Everist 454 (holo: BRI).

Illustrations: Williams (1979: 108), as *Eriostemon myoporoides* subsp. *queenslandicus*; Bayly (1998: 114, fig. 1f) & Haslam (2004: 90), as *Philotheca myoporoides* subsp. *queenslandicus*.

Wiry stemmed subshrub to 1 m high; rootstock often rhizomatous. Branchlets sparsely glandular verrucose. Leaves densely clustered near stem apices; leaf laminae narrow-elliptic to narrow-obovate, flat to concave, 9–30 mm long, 1.5–7 mm wide, length/width ratio of 2.7–10; apex obtuse to acute, shortly mucronate; base attenuate to cuneate. Inflorescences pedunculate to 3 mm, with a solitary flower; pedicels 3–6 mm long, sparsely glandular-verrucose. Petals elliptic-oblong, 4–10 mm long, 1.4–3.8 mm wide, adaxially papillose, abaxially glabrous, apart from scattered verrucose glands in the middle towards the apex, cream, tinged with pink. Staminal filaments densely ciliate for entire length, apex with dense, longer hairs to 1.5 mm long. Cocci erect, bluntly apiculate to shortly rostrate, 5–8 mm long.

Selected specimens examined: Queensland. WIDE BAY DISTRICT: Sandy Creek, c. 10 miles W of Tin Can Bay, Sep 1967, *Brass* 33696 (BRI); near Boonooroo, Sep 1948, *Clemens s.n.* (BRI [AQ151812]); Noosa Shire land, 2.5 km W of Lake Weyba, 26° 25'S, 153° 02'E, Jan 2003, *Forster PIF29234 & Thomas* (BRI); Old Hollett road, 2 km W of Lake Weyba, 26° 25'S, 153° 02'E, Mar 2003, *Forster PIF29278 & Thomas* (BRI, MEL, NSW); Peregrin, opposite to Lake Weyba N.P., 26° 29'S, 153° 06'E, Sep 1992, *Franks AJG9209018 & Suosaari* (BRI); Cooloola Way, Cooloola N.P., 26° 04'S, 152° 59'E, Aug 1994, *Grimshaw G896 & Turpin* (BRI); Cooloola, just inside northern boundary of R1093, east of Noosa River, Jul 1971, *Harrold* 84 (BRI); Noosa Heads, May 1953, *Hunt s.n.* (BRI [AQ151800]); Lake Cootharaba, *s.dat.*, *Keys & Wedd s.n.* (BRI [AQ151803]); near Poverty Point, Tin Can Bay, 25° 57'S, 153° 03'E, Jun 1978, *Williams* 78061 (BRI). MORETON DISTRICT: Maroochie, Jul 1879, *Bailey s.n.* (BRI [AQ151796]); Caloundra, Aug 1932, *Blake* 4133 (BRI); 0.8 km S of Mt Coolum turnoff (Suncoast

Beach Drive) on David Low Way, 26° 34'S, 153° 05'E, Jun 1992, *Doust* 357 & *Brown* (BRI, NSW); Roys Road, Beerwah, 26° 51'S, 153° 00'E, Oct 1999, *Forster PIF24936* (AD, BRI, MEL, NSW); 1.6 km NE of Landsborough, 26° 47'S, 152° 58'E, Aug 1988, *Ross* 3181 (BRI, MEL); 3 km N of Coolum Beach, Jan 1977, *Sharpe* 2140 (BRI); Bribie Island – Caboolture road, about halfway, Mar 1964, *van Royen* 9339 (BRI); North of Currumundi Lakes, Caloundra, 26° 46'S, 153° 08'E, Mar 1971, *Williams s.n.* (BRI [AQ151794]).

Distribution and habitat: *Philotheca queenslandica* is endemic to south-eastern Queensland with a northern limit at Boonooroo and a southern limit at Bribie Island. Plants occur in lowland, wallum heathlands in boggy or sandy soils that are seasonally moist to inundated at altitudes below 100 m.

Notes: *Philotheca queenslandica* is the most herbaceous of all the species enumerated here (the others are all noticeably woody subshrubs or shrubs) and has been observed to possess a rhizomatous rootstock (not apparent in the other taxa). It perhaps most closely resembles *P. conduplicata*; however, it differs from that species in the smaller leaves (9–30 mm long, versus 30–65 mm long), the leaf shape (narrow-elliptic to narrow-obovate, flat to concave when dry, versus elliptic, falcate and strongly conduplicate when dry) and the smaller flowers (petals 4–10 mm long versus 7–11 mm long) and capsules (5–8 mm long versus 7–9 mm long).

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