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Taxonomy of the *Calytrix ecalycata* complex (Myrtaceae)

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Abstract

G.J. Keighery, Taxonomy of the *Calytrix ecalycata* complex (Myrtaceae). *Nuytsia* 15(2): 261–268 (2004). The part of the genus *Calytrix* Labill. that was formerly regarded as the monotypic genus *Calythropsis* C.A. Gardner is shown to be composed of two allopatric species, *Calytrix ecalycata* Craven and *C. pimeleoides* C.A. Gardner ex Keighery. The former species is comprised of three geographically separated subspecies, *C. ecalycata* subsp. *ecalycata*, *C. ecalycata* subsp. *brevis* Keighery and *C. ecalycata* subsp. *pubescens* Keighery.

Introduction

*Calytrix ecalycata* sens. lat. is a very distinctive member of the genus *Calytrix* Labill., having been previously placed in a separate monotypic genus, *Calythropsis* C.A. Gardner. *Calythropsis* differed from *Calytrix* in having 4- rather than 5-merous flowers and lacking a calyx. Although Craven (1987) maintained *Calythropsis* as a distinct genus, further studies led Craven (1990) to reduce it to a synonym of *Calytrix*, which necessitated the selection of a new epithet (*ecalycata*) for the species previously known as *Calythropsis aurea* C.A. Gardner. *Calytrix ecalycata* appears, as Craven (1987) noted, to be most closely related to *C. platycheiridia* Craven.

Earlier, Keighery (1979) had examined and illustrated materials grown in Kings Park which suggested that several taxa were included under *Calythropsis aurea*. This was also the opinion of Charles Gardner, who had annotated material from north of Geraldton as a separate species. Craven (1990) noted the degree of variation in his broadly circumscribed *Calytrix ecalycata*, but he felt that the variation was continuous and was unable to segregate any taxa within the complex. Subsequent examination of all collections held at the Western Australian Herbarium has lead the current author again to the conclusion that the variation is discontinuous and that several allopatric taxa are included under *Calytrix ecalycata*. This paper erects a new species based on Charles Gardner’s manuscript name and describes several geographic subspecies in *Calytrix ecalycata*. 
Taxonomy

Key to the species and subspecies of the Calytrix ecalycata complex

Because of the unique nature of the group in being 4- rather than 5-merous and lacking a calyx, the members of the of the Calytrix ecalycata complex separate at the beginning of any key to the genus.

1. Flowering branches with appressed imbricate ovate-obovate floral leaves ....... C. pimeleoides
1. Flowering branches with erect-spreading linear floral leaves

2. Leaves and cheiridium pubescent ............................................ C. ecalycata subsp. pubescens
2. Leaves and cheiridium glabrous

3. Leaves 7–9 mm long, cheiridium resinous ....................... C. ecalycata subsp. ecalycata
3. Leaves 3–5 mm long, cheiridium not resinous ....................... C. ecalycata subsp. brevis

1. Calytrix pimeleoides C.A. Gardner ex Keighery, sp. nov.

Frutex ad 1.6 m altus, glaber. Folia exstipulata, imbricata, lamina, late elliptica vel obovate, 6–7 mm longa; foliorum floralium imbricata, lamina ovata, 5–6 mm longa, 4–5 mm late. Flores cheiridio subcomplanato subteni. Hypanthium 4 costata. Stamina 35-50, 2-3 seriate. Stylus non persistens, apice hypanthii abscondens.


Slender erect shrub, to 1.4 m tall and wide. Branchlets glabrous, brown-green not reddish, angled, apices of stems continuing growth. Bud scales absent. Leaves alternate, imbricate, appressed below inflorescence, stipules absent, petiole glabrous, c. 0.5 mm long, blade narrowly elliptic to obvate, 7–9 mm long, 2–3 mm wide, depressed-triangular in transverse section, with prominent scarious ciliate margins, ridged abaxially, surface slightly convex, gradually tapering to the petiole, apex acute. Floral leaves ovate, petiole obsolete, 5–6 mm long, 4–5 mm wide, margins scarious, ciliate-erose. Inflorescence 15–25 mm wide, many-flowered, usually at apex of branches; peduncles c. 0.5 mm long. Cheiridium flattened (more or less obvate to elliptic), glabrous, 5-6 mm long, laterally strongly ridged, lobes narrowly ovate, 1–2 mm long, margins and keel ciliate, inner entire, apex acuminate. Hypanthium glabrous, 4 ribbed, c. 3 mm long, not produced above the ovary, subcylindrical. Calyx lobes absent. Petals glabrous, yellow, narrowly elliptic to oblong, 9–10 mm long, c. 2 mm wide, apex rounded. Staminal disc prominent; stamina 35–50, 2- or 3-seriate, filaments and anthers yellow, 4–5 mm long, anthers all fertile, connective not prominent. Style yellow, deciduous, abscising at ovary apex, c. 5 mm long. (Figure 1A–D).

Selected specimens examined. WESTERN AUSTRALIA: S of Ogilvie, 28 Oct. 1962, J.S. Beard 2103 (PERTH); 20 km E of Kalbarri, 10 Aug. 1979, D. & B. Bellairs 1648 (PERTH); Northampton, Aug. 1947, B.J. Grieve s.n. (PERTH); 22.5 km N of Northampton, 2 June 1973, B.L. Powell 73054 (PERTH).

Distribution. Occurs inland of Kalbarri to Ajana and south to Northampton. (Figure 2A)

Habitat. On deep yellow sands, usually under Banksia sceptrum or Banksia prionotes low woodland.

Flowering period. August to October.

Scale bars for flowering branches = 5 mm, all other scale bars = 3 mm.
Figure 2. Distribution maps. A – *Calytrix pimeleoides* ● and *C. ecalycata* subsp. *brevis* ◆; B – *C. ecalycata* subsp. *ecalyca* ○ and *C. ecalycata* subsp. *pubescens* ♦.
Chromosome number. 2n = 22 (Rye 1979). Voucher B.L. Powell 73054 (PERTH 02335220).

Conservation status. Conservation Codes for Western Australian Flora: Priority Three. Present in Kalbarri National Park, but size of population uncertain.

Etymology. The epithet pimeleoides is a reference to the superficial appearance of the plant with the imbricate leaves of certain Pimelea species, such as P. ammocharis or P. argentea.

Notes. This species was annotated by Gardner as Calytrix pimeleoides ms on the collection chosen as the type. This is an appropriate name for the new taxon and has therefore been maintained.

It differs from Calytrix ecalycata in possessing large inflorescences, appressed imbricate leaves with prominent scarious margins on the glabrous flowering branches. The large ovate floral leaves and large flowers are also distinctive.


Slender erect shrub, to 1.6 m tall and wide, usually less. Branchlets glabrous, hirsute or resinous when flowering otherwise glabrous, brown-green not reddish, angled, apices of stems continuing growth. Bud scales absent. Leaves alternate, overlapping but not imbricate, erect, spreading to ascending, stipules absent, petiole glabrous or hirsute, 0.5 mm long, blade linear to narrowly elliptic, glabrous or pubescent, 3–9 mm long, 0.5–0.75 mm wide, slightly curved or straight, depressed triangular in transverse section, ridged abaxially, oil glands prominent, margins entire, ciliate or toothed, gradually tapering to the petiole, apex acute. Floral leaves broader, linear or elliptic-ovate, with an expanded base, glabrous or densely hairy, elliptic-ovate, usually shorter than vegetative leaves, petiole obsolete or 0.5 mm long, 1–2 mm wide, margins scarious, ciliate or pubescent, oil glands prominent and glabrous, pubescent or covered in sticky resinous exudate, apex acute or long acute. Inflorescence 10–20 mm wide, axis resinous, glabrous or pubescent, many-flowered, usually at apex of branches; peduncles c. 0.5 mm long. Cheiridium flattened (more or less obovate to elliptic), glabrous, pubescent or resinous, shiny, 4–6 mm long, laterally strongly ridged, lobes narrowly ovate, 0.5 mm long, margins entire, apex acuminate. Hypanthium glabrous, 4-ribbed, fused to style, 4–6 mm long, compressed, subcylindrical, region above ovary either not or shortly produced above cheiridium. Calyx lobes absent. Petals glabrous, yellow, narrowly elliptic to oblong, 5–7 mm long, c. 2 mm wide, apex rounded. Staminal disc prominent; stamens 35–50, 2- or 3-seriate, filaments and anthers yellow, 4–5 mm long, anthers all fertile, connective not prominent. Style yellow, deciduous, absicising at ovary apex, c. 5 mm long.

Distribution. Occurs between Port Gregory and Regans Ford.

Etymology. The epithet is from the Latin words meaning without a calyx, referring to the genus Calythropsis lacking a calyx.

Notes. Three allopatric subspecies are recognised.
2a. Calytrix ecalycata Craven subsp. ecalycata

Slender erect shrub, to 1.6 m tall and wide. Branchlets resinous when flowering otherwise glabrous. Leaves erect, spreading to ascending; petiole 0.5 mm long, glabrous; blade linear, 7–9 mm long, 0.5–0.75 mm wide, glabrous, oil glands prominent, margins entire. Floral leaves elliptic-ovate, 4–6 mm long, c. 2 mm wide, margins scarious, ciliate, oil glands prominent, covered in sticky resinous exudate, apex long-acute. Inflorescence 15–20 mm wide, axis resinous. Cheiridium 5–6 mm long, resinous, shiny. Hypanthium glabrous, region above ovary short not produced above cheiridium. Petals 6–7 mm long. (Figure 1E–H).

Selected specimens examined. WESTERN AUSTRALIA: Yerina Springs road, 5.7 km N of Port Gregory road, 8 Aug. 1997, R. Davis 3633 (PERTH); 30 km SW of Three Springs, 4 Sept. 1984, D.B. Foreman (CANB, MEL, PERTH); 8 km N of Mt Lesueur, 24 Sep. 1979, E.A. Griffin 2224 (PERTH); Dookanooka Nature Reserve, SW of Three Springs, 5 Oct. 1992, E.A. Griffin 6914 (PERTH); Billeranga Hills, 17 km W of Morawa, 22 Apr. 1997, F. Keast 007 (PERTH).

Distribution. Occurs east of Port Gregory, then apparently disjunct to Morawa and Three Springs and west to Mt Lesueur. (Figure 2B)

Habitat. Occurs on sand (yellow, white and grey), shallow loamy soils over ironstone, sandstone and granite, sands over clays or clay-loams. In Wandoo woodland, Melaleuca uncinata shrubland, mixed low heath, Eucalyptus eudesmioides mallee. These sites are largely water gaining sites that are winter damp.

Flowering period. August to September.

Conservation status. Conservation Codes for Western Australian Flora: Priority Three. Relatively widespread but conservation status uncertain, although recorded as present in at least one nature reserve and probably Mt Lesueur National Park.

Notes. Differs from all other members of the C. ecalycata complex in the larger flowers, longer leaves, resinous floral stems, floral leaves and cheiridium. Differs from Calytrix pimeleoides in the linear, overlapping spreading not imbricate leaves.

2b. Calytrix ecalycata subsp. brevis Keighery, subsp. nov.

Folia extipulata, non imbricata, lamina lineare, glabrescens, 3–5 mm longa, 0.75 mm late; foliolum florarium lamina lineare vel lineare-obovate, 3–4 mm longa, 1 mm late. Flores cheiridio subcomplanato, glabrescentia.

Typus: Warro Rd, 30°43'S, 115°51'E, Western Australia, S. Patrick 1545 (holo: PERTH 04284399; iso: CANB).

Slender erect shrub, to 1 m tall and wide. Branchlets glabrous. Inflorescence 10–15 mm wide. Leaves erect-ascending below inflorescence; petiole c. 0.5 mm long, glabrous; blade linear to narrowly elliptic, 3–5 mm long, 0.5–0.75 mm wide, with sparsely ciliate or toothed margins. Floral leaves linear with an expanded base, petiole obsolete, usually shorter than vegetative leaves, 3–4 mm long, c. 0.5 mm
2c. **Calytrix ecalycata** subsp. **pubescens** Keighery, *subsp. nov.*

Frutex ad 60 cm altus, pubescentia. Folia, lamina, pubescentia, lineare, 4–6 mm longa, 0.75 mm late; foliorum floralium, pubescentia, lamina lineare vel lineare-elliptica, 4–6 mm longa, 1 mm late. Flores cheiridio, pubescentia.

*Typus:* Barberton West Rd, south-west of Moora, 30°43′S, 115°58′E, Western Australia, 29 September 1988, E.A. Griffin 5322 (holo: PERTH 03118622).

Slender erect shrub, to 0.6 m tall and wide. Branchlets pubescent. Inflorescence 10–13 mm wide. Leaves spreading-ascending; blade linear, 4–6 mm long, 0.5–0.75 mm wide, covered with long white hairs, giving the plant a greyish colour, margin entire. Floral leaves broader with an expanded base, 4–6 mm long, c. 1 mm wide, more densely hairy. Cheiridium margins pubescent, rest covered in scattered hairs. Hypanthium not produced above the ovary. Petals 5–6 mm long.

*Other specimens examined.* WESTERN AUSTRALIA: C.A. Gardner? 12766 (PERTH 04134702, 05073545).

*Distribution.* Known only from type locality. (Figure 2B).

*Habitat.* On brown loamy clay in *Eucalyptus wandoo* woodland.
Flowering period. Recorded in flower in September.

Conservation status. Conservation Codes for Western Australian Flora: Priority One.

Etymology. The epithet is from the Latin word for hairy.

Notes. Differs from other members of the complex in the non-glandular pubescent stems, floral leaves and cheiridium, and from Calytrix ecalycata subsp. ecalycata also in the short linear, erect but not spreading leaves and the smaller flowers.

This is the southernmost member of the complex, which has been represented in PERTH for many years by an unlabelled collection, perhaps collected by Charles Gardner.

References