

***Calandrinia* sp. Boolardy Station (P. Jayasekara 719-JHR-01)
is a synonym of *C. mirabilis* (Montiaceae)**

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SHORT COMMUNICATION

Calandrinia mirabilis Chinnock & J.G. West was described by West and Chinnock (2013) as a large (5–15 cm tall, 10–120 cm diam.), prostrate to decumbent annual with fleshy, spatulate, basal leaves that become shorter and spatulate to obovate along each stem/scape, which usually terminates with an inflorescence axis of 3–7(–15) flowers. The flowers can be very large and showy (up to 45 mm diam.) and are medium pink to magenta in colour with irregular white, orange-red and yellow bands in the lower third, with 8–11 petals, 4 stigmas, and numerous stamens (e.g. *F. Obbens* & *R. Davis* FO 9/13 PERTH 08477361, <https://www.inaturalist.org/observations/75628598>). The capsules are 4-valved. Initially the valve tips barely separate (i.e. a pore-like opening); however, they may open further with maturity. Capsules appear square in cross section due to the valve abscission lines becoming slightly thickened and raised. Each capsule has many reniform to sub-reniform, shiny, mid to dark tan seeds, *c.* 0.6 mm long, 0.45 mm wide, with a very fine, colliculate, surface pattern.

Prior to being formally named, *C. mirabilis* was recognised at PERTH from 2009 by the phrase-name *C. sp. Mt Clere* (R.J. Dadd 5). At the time that name was erected, this taxon was known only from relatively few collections from Mt Clere, Walburg and Landor Stations in the mid to upper Gascoyne River catchment.

In October 2008 while undertaking a field survey for a proposed mining rail link to the Geraldton area, one of the consultant botanists (P. Jayasekara), collected a *Calandrinia* species on Boolardy Station, about 250 km east of Kalbarri in the Murchison bioregion. While this specimen had clear similarities to *C. sp. Mt Clere* it differed in regard to several characters such as: smaller spatulate basal leaves; smaller, lighter-coloured flowers with 8 petals only; a later flowering time; slightly smaller seeds, but with a very similar surface pattern; and capsules with 4, 5 and 6 valves on the same plant. In addition, the collecting locality was some 170 km south of the known distribution of *C. sp. Mt Clere*. I considered this entity to be either a new species or possibly a subspecies of *C. sp. Mt Clere* (i.e. what was later described as *C. mirabilis*). In an attempt to resolve this matter I returned to the original collection site on Boolardy Station in 2010 but failed to relocate the population and no new populations were discovered in the area. Further attempts in ensuing years to relocate *C. sp. Mt Clere* made no progress, but now the Station was under CSIRO control as the location of the Square Kilometre Array (SKA) project. The phrase-name *C. sp. Boolardy Station* (P. Jayasekara 719-JHR-01) hence was erected in 2017 to protect this entity from potential site works. In September 2024 a fieldtrip through a large part of Boolardy Station managed to locate several sizeable populations. Examination of those populations showed most plants have characters consistent with *C. mirabilis* and usually have 10 petals with occasional plants having fewer or more petals (8–12), and even fewer plants with variable valve numbers (>4). In respect to these characters, the original

collected plant was aberrant and, therefore, I now consider that *C. sp.* Boolardy Station (P.Jayaeskara 719-JHR-01) should be synonymised under *C. mirabilis* and the following collections redetermined as such: *P. Jayasekara* 719-JHR-01 (PERTH); *B. Neasham* SKA-BN005 (PERTH); *F. Obbens* FO 01/24 (PERTH); *F. Obbens* FO 02/24 (PERTH).

Calandrinia mirabilis Chinnock & J.G.West, *J. Adelaide Bot. Gard.* 26: 97–101, figs 1–6, pl. 1 (2013).

Calandrinia sp. Mt Clere (R.J. Dadd 5), Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [accessed 24 March 2025].

Calandrinia sp. Boolardy Station (P.Jayaeskara 719-JHR-01), Western Australian Herbarium, in *Florabase*, <https://florabase.dbca.wa.gov.au/> [accessed 24 March 2025].

Phenology. Flowering occurs from mid-September to mid-October dependent on the season and population location (i.e. northern populations may start flowering slightly earlier than southern populations). Seeds may remain on plants up to mid-November potentially.

Distribution and habitat. The original collections of *C. mirabilis* all come from a relatively small area of the mid Gascoyne region as previously stated, while the inclusion of the above specimens extends the distribution well southwards into Boolardy Station in the Murchison region. Another disjunct collection has also been found west of Wiluna (*J. Morrissey* 50) and was only determined as *C. mirabilis* in 2022 being among loan material returned from CANB. *Calandrinia mirabilis* prefers flats or small vegetated dunes with red to red-brown sandy clay or sometimes orange-brown sand. The predominant vegetation type is open *Acacia* shrubland (e.g. *A. ramulosa* var. *linophylla*, *A. incurvaneura*, *A. kempeana*, *A. rhodophloia*) and other shrubs including *Eremophila forrestii*, *Grevillea nematophylla*, *Hemigenia botryphylla*, *Ptilotus polystachyus*, *Senna artemisioides* subsp. *helmsii*, *Solanum lasiophyllum* and *Thryptomene decussata*. Grasses include *Aristida holathera*, *Eragrostis eriopoda* and *Eriachne mucronata* with a scattering of other annual species such as *Gnephosis tenuissima*, *Angianthus tomentosus* and *Calandrinia creethae*.

Conservation status. At present, *C. mirabilis* is listed as Priority One under Conservation Codes for Western Australia (Western Australian Herbarium 1998–). The addition of the Boolardy Station collections will change that status to Priority Three (Tanya Llorens pers. comm.), although finding more populations in the large area between the Gascoyne and Murchison regions is highly probable.

Affinities. *Calandrinia mirabilis* looks superficially similar to *C. papillata* Syeda, which is another 4-valved species with many petals (i.e. 7–9 petals), but is generally a smaller plant with mainly long, terete leaves and papillate seeds. Both these species belong within clade 6 (Hancock *et al.* 2018), which closely corresponds to section *Basales* (Von Poelnitz 1934); however, *C. mirabilis* is closest to *C. strophiolata* (F.Muell.) F.Muell. ex B.D.Jacks. within this current molecular phylogeny. *Calandrinia strophiolata* differs from *C. mirabilis* in having long, thin terete to compressed leaves rather than spatulate leaves; 6-valved rather than 4-valved capsules and very different seeds that are somewhat sub-reniform to tear-drop shaped, smooth and with a large and distinctive strophiole.

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References

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