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A new, rare *Tetratheca* from the Goldfields Region

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Background

Taxonomic research on the genus *Tetratheca* (Elaeocarpaceae) in Western Australia has seen ten new species and two new subspecies described since 2005, all of which have Priority or Threatened status on the *Declared Rare and Priority Flora List for Western Australia* due primarily to their restricted distributions and specific habitats. Of the 34 named *Tetratheca* in Western Australia, eight are currently gazetted as Rare Flora under the *Wildlife Conservation Act 1950*. Five of these are restricted to individual, small, disjunct Banded Iron Formation (BIF) ranges in the Goldfields Region, north of Southern Cross—*T. aphylla* subsp. *aphylla* (Helena and Aurora Ra.), *T. erubescens* (Koolyanobbing Ra.), *T. harperi* (Jackson Ra.), *T. paynterae* subsp. *cremnobata* (Die Hardy Ra.) and *T. paynterae* subsp. *paynterae* (Windarling Ra.). The surrounding sandplain country is occupied by *T. efoliata*, a widespread and commonly-occurring species.

In November 2011, a previously unknown population of *Tetratheca* was discovered by Southern Cross resident, gold prospector and regional flora and fauna survey co-ordinator Charlie Spencer, while he was exploring breakaway country south-west of Kambalda. Being familiar with the morphology and distribution of the other *Tetratheca* taxa in the region, Charlie recognised that this was an unusual population of plants and collected a specimen for taxonomic review. Preliminary examination of this specimen by Geoff Cockerton (Western Botanical) indicated that it did not match any of the known species from this taxon-rich area and the specimen was sent to the Western Australian Herbarium for specialist assessment.

Charlie Spencer, with plants of the newly discovered *Tetratheca* in the foreground (left). (Clockwise from top left) Low, degraded, lateritic outcrop with plants growing in drainage lines; dull flowering stems and pendulous flowers; flower showing five, uniformly pink petals; clumped habit. Photographs: © Jonathan and Danae Warden.

Findings

Detailed examination of the *Tetratheca* concluded that it was a distinct new species, unknown to science. Although the *Tetratheca* shared at least one character with each of the other species in the region, it could be readily distinguished by a unique combination of characters.

Follow-up survey by Western Botanical has identified only a single population of *c.* 1,350 plants in an area of *c.* 300 m^2 occurring on low, lateritic outcrops south-west of Kambalda. The smallest discrete aggregate of plants is *c.* 30 individuals and the largest is *c.* 250 individuals.

A taxonomic description of the new species was published by Butcher and Cockerton in *Nuytsia* Volume 22(3), freely available through the journal's link on FloraBase. A taxonomic key to all the 'leafless' *Tetratheca* taxa in Western Australia and a summary table of distinguishing characters for all the Goldfields Region taxa is also provided.

Species Facts

Tetratheca spenceri can be identified by its dull, wrinkled stems and glandular hairs on the flower stalk (top left), red stamens with a narrow anther tube (top right), and the presence of two ovules in each locule of the ovary (lower left and right; mature seeds and aborted ovules shown). Variation in fruit shape and size is correlated with the number of seeds that develop fully.

Scientific name

Tetratheca spenceri R.Butcher & Cockerton

Named in honour of Paul Geoffrey (Charlie) Spencer.

Vernacular names

Spencer's Tetratheca or Charlie's Gold

Diagnostic features

- clumped sub-shrubs, 0.5–0.6 m × 0.8–1 m
- stems straight, dull, lightly waxy and wrinkled
- scale leaves alternate, appressed and deciduous
- flower stalk with a cluster of glandular hairs
- petals 5 (rarely 4), uniformly pink
- stamens red, with gently curved anther body and narrow, incurved anther tube
- two ovules in each locule of the ovary
- fruit compressed-ellipsoid to -narrowly obovoid

Habitat

Grows on low, lateritic outcrops and in drainage lines in sparse *Eucalyptus stricklandii* mallee woodland, over sparse tall shrubland of *Alyxia buxifolia*, *Leucopogon* sp. Kambalda and *Melaleuca leiocarpa*, and sparse low shrubs and herbs including *Lepidosperma* sp. Parker Range, *Ptilotus helichrysoides* and *Scaevola spinescens*.

Conservation status

Currently listed as Priority One under DEC Conservation Codes for Western Australian Flora due to its small area of occupancy and threats to its habitat associated with mineral prospecting and mining.

Management Implications

The Goldfields Region is rich in plant species as well as minerals. Ongoing discovery of new taxa in areas of mining interest stresses the imperative for sustainable development in our unique and fragile environment. It also highlights taxonomy's essential role in underpinning the conservation of our remarkable biodiversity; only through naming and describing these valuable finds and disseminating this information to others can our species be accurately identified, assessed for potential threats and conserved into the future.

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