

SHORT COMMUNICATION

Gastrolobium* sp. Harvey (G.J. Keighery 16821) (Fabaceae) is not distinct from *G. capitatum

The phrase-name *Gastrolobium* sp. Harvey (G.J. Keighery 16821) was placed on the Western Australian plant census in 2006 following the collection of three specimens (*G.J. Keighery* 16715, 16788 & 16821) in 2005 from two small wetland reserves in the Pinjarra–Harvey area. It was given a Priority Two conservation listing in 2008 based on its restricted distribution and potential threats to habitat posed by the construction of the Perth–Bunbury Highway, a conservation status it still retains (Smith & Jones 2018).

In the absence of contemporary documentation detailing the morphological basis for its recognition, it is not known with what species *G. sp. Harvey* was compared in order to determine that it was distinct. We suspect a comparison was made with *G. ebracteolatum* G.Chandler & Crisp, under which all three specimens were originally placed, presumably because of a shared wetland habitat, similar long, narrow, often alternate leaves and a tall habit (variously recorded in the three specimens as ‘sprawling shrub 2 m tall × 2 m wide’, ‘twining erect shrub 2 m tall × 2 m wide’ and ‘slender erect scrambling shrub 1–2 m tall × 2 m wide’). There are, however, some major differences between the two, with *G. sp. Harvey* having condensed axillary or terminal racemes (inflorescences 2–6-flowered; rachis 1–3 mm long) rather than elongate terminal racemes (inflorescences at least 20-flowered; rachis 60–180 mm long), and four to eight ovules rather than at least 15 (Chandler *et al.* 2002).

Examination of the *Gastrolobium* R.Br. collection at the Western Australian Herbarium (PERTH) has since found that *G. sp. Harvey* is comparable in its floral and foliar morphology to a large number of *G. capitatum* (Benth.) G.Chandler & Crisp specimens. In particular, specimens referred to as a ‘narrow leaved form, generally recumbent, typically on/around swamps of the Swan Coastal Plain’ (E.A. Griffin 1993, *in sched.*) match *G. sp. Harvey* in all features other than the size of the plants (*G. capitatum* is typically a sprawling sub-shrub to 1 m tall). Two ‘Swan Coastal Plain Survey’ (Gibson *et al.* 1994) voucher specimens collected from seasonally wet sites and identified as *Gastrolobium* aff. *capitatum* (originally as *Nemcia* aff. *capitata*; B.J. Keighery & N. Gibson 120 & 132) also match Griffin’s concept of this swamp form. Chandler *et al.* (2002: 679) noted that *G. capitatum* ‘grows in a variety of habitats, from wet to quite dry, on sandy to loamy soils in woodland or open forest’ but did not recognise any ecotypes as warranting formal taxonomic status. It is noteworthy that their specimen citations under *G. capitatum* included B.J. Keighery & N. Gibson 120.

Relative to plants collected from drier habitats there is a tendency for wetland specimens of *G. capitatum* to have leaves that are narrower and for there to be a higher ratio of alternate to opposite leaves (note that a mixed phyllotaxis is the norm for this species). However, these are tendencies only and neither constitutes a consistent difference. The following specimens exemplify the overlapping nature of these characters: *S. Turner* 257 and *S. Turner* 310, from dry *Banksia* woodland in metropolitan Kiara and Noranda, respectively, have the narrow leaves (to 5 mm) typical of the wetland variant but with opposite leaves predominating; *M.D. Crisp* & *W.M. Keys* MDC 8943, from a wetland in the Busselton area, has mostly alternate leaves but their width (to 8 mm) is more commonly found in plants growing in dry habitats; *M.J. Kealley* 1304, from the Darling Range north-west of Bannister, has narrow, mostly alternate leaves but is from a dry, lateritic site.

Examination of specimens of *G. sp. Harvey* against the *G. capitatum* collection at PERTH cannot identify any morphological characters by which this entity might be considered distinct. The narrow leaf form and predominantly alternate phyllotaxis characteristic of *G. sp. Harvey* is shared with most *G. capitatum* specimens collected from seasonally wet areas (as well as some collected from drier habitats). Both phyllotaxis and leaf size must be regarded as variable characters in this species.

The only feature of *G. sp. Harvey* that falls outside the known parameters of *G. capitatum* is plant size. The recorded dimensions of up to 2 m high and 2 m wide are certainly well beyond the proportions otherwise recorded for *G. capitatum*. Perhaps the habitat at these sites is particularly favourable to the species or the areas are long-unburnt, or both, but even if the reasons for the large growth habit are genetic, a single difference of this kind does not provide a strong basis for the recognition of a distinct taxon. In summary therefore, we believe that *G. sp. Harvey* is best regarded as a variant or ecotype of *G. capitatum*.

Taxonomic investigation of this phrase-name has also identified that the key to species of *Gastrolobium* (Chandler *et al.* 2002) contains contradictory information to that presented in species descriptions, such that good representatives of a species may not key out correctly. For example, lead 114 (Chandler *et al.* 2002: 627) provides the alternatives ‘rachis >5 mm long’ and ‘rachis <1 mm long’, but *G. capitatum*, which is recorded as having ‘rachis 1–2 mm long’ in its description (Chandler *et al.* 2002: 678), falls into neither category and can only be reached in the key if the first alternative is taken. Problems with the key may have contributed to the original misidentification of the three specimens that later became the basis for the phrase name *G. sp. Harvey*, which highlights the importance of a well-curated research herbarium collection for accurate species identification.

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References

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Ryonen Butcher¹ and Michael Hislop

Western Australian Herbarium, Biodiversity and Conservation Science,
Department of Biodiversity, Conservation and Attractions,
Locked Bag 104, Bentley Delivery Centre, Western Australia 6983

¹Corresponding author, email: Ryonen.Butcher@dbca.wa.gov.au