Nuytsia The journal of the Western Australian Herbarium

23: 95–99 Published online 28 March 2013

SHORT COMMUNICATION

'There are greater things in life than cricket': *Tetratheca aphylla* (Elaeocarpaceae), James Drummond and the exploration of the Helena and Aurora Range

Tetratheca aphylla F.Muell. was described by Mueller in 1882 based on a single James Drummond collection. The type sheet has a blue Mueller label with the taxon name and 'J. Dr.', 'W.A.' in Mueller's hand, and in the protologue Mueller gives the origin of the collection as 'West Australia; from the late Mr. James Drummond's collections, in which no indication of the precise locality of this plant is given' (Mueller 1882). No further collections of this species were made for over 100 years, until it was collected in 1979 from 80 km north-east of Bullfinch in the Helena and Aurora Range (*K.R. Newbey* 5916, PERTH). Collections were also made from the Newdegate area in 1982 (*A. Strid* 21089, PERTH), some 300 km south of the Helena and Aurora Range. All subsequent collections of this species have been made from populations in these two highly disjunct areas. In the Helena and Aurora Range the species is largely confined to massive Banded Iron Formation extending eastward from Bungalbin Hill (Figure 1).

Recent taxonomic studies found subtle but consistent morphological differences between the two disjunct populations, warranting the recognition of two subspecies (Butcher 2007: 145); these morphological differences were supported by molecular data (Butcher *et al.* 2007). As Drummond's type of *T. aphylla* is in poor condition and lacks diagnostic fruits, it was necessary to select an epitype prior to describing a new subspecies in order to unambiguously assign the autonym to either the Helena and Aurora Range or Newdegate populations. Butcher (2007) designated a recent collection from the Helena and Aurora Range (*B.J. Lepschi* 1988) as the epitype because plants from this area most closely approximate Drummond's collection in lacking glandular hair remnants on the stems (which are typical of the Newdegate populations) and in having flowers with more similarly sized petals and stamens to the loose fragments of the type. The new subspecies, *T. aphylla* subsp. *megacarpa* R.Butcher, was then described to encompass collections from near Newdegate with broader fruits. Unfortunately, the epitype designation was invalidly published under Article 7.10 of the *International Code of Nomenclature for algae, fungi and plants* (McNeill *et al.* 2012); this is rectified herein.

A puzzling question is how Drummond obtained material of *T. aphylla*, given that he did not visit either the Helena and Aurora Range or Newdegate areas (Erickson 1969). The recent publication of the diaries of two expeditions that visited the Helena and Aurora Range in 1861 and 1864 looking for new grazing lands (Brooker 2006, 2012) provides a likely resolution to this problem.

The 1861 expedition consisted of Charles and Andrew Dempster, James Drummond's grandson Barnard Clarkson and his friend Charles Harper, and a Noongar man named Correll (Brooker 2006). The expedition diary entry for 23rd July 1861, as the expedition approached the Helena and Aurora Range, states 'here we collected several botanical specimens, which were carefully preserved, in order to forward to Mr Drummond'. The expedition spent 24th July 1861 exploring Bungalbin Hill

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ISSN 2200-2790 (Online)
ISSN 0085-4417 (Print)

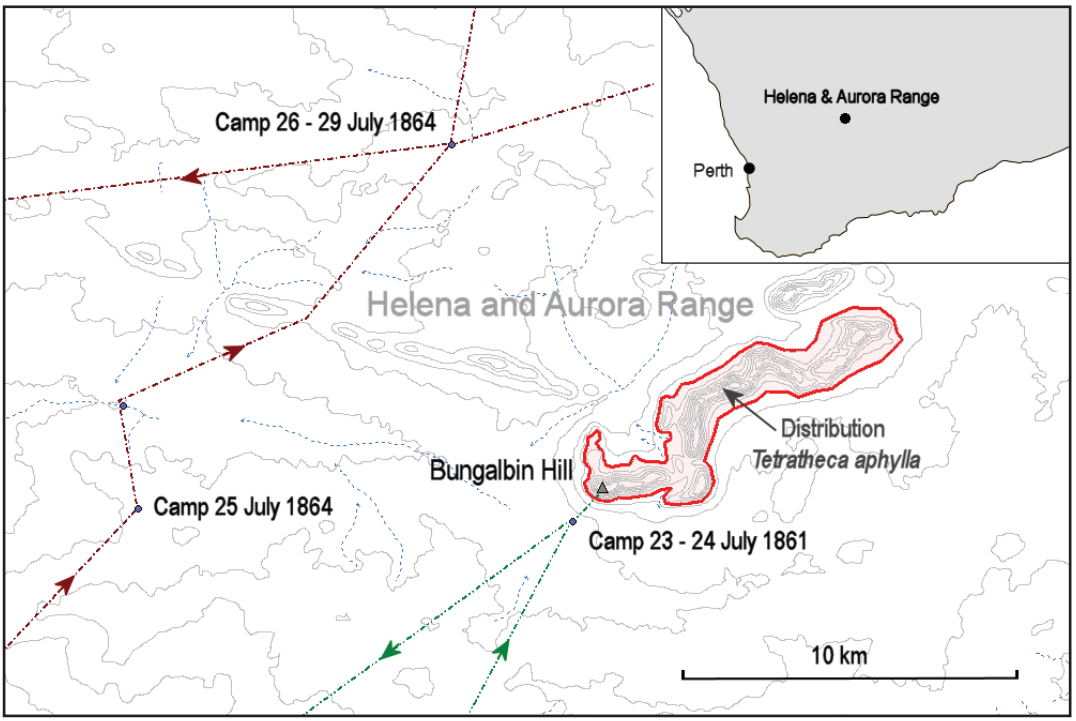

Figure 1. Map of the Helena and Aurora Range region showing the known geographical extent of *Tetratheca aphylla* in the area and the tracks and campsites of the 1861 and 1864 expeditions (based on Brooker 2006, 2012).

(which they called Mt Kennedy), climbing it from the south side (Figure 1). The diary entry records that they collected rock samples but does not record the collection of any plants. This is the furthest inland that the expedition reached, heading south-west the following day back toward Lake Deborah East. The collections from this expedition were presumably given to James Drummond senior on the return of the expedition in August 1861.

The 1864 expedition consisted of Clarkson, Harper, Harper's cousin Lionel Lukin and a Noongar man named Gyngnitch (Brooker 2012). On this expedition they crossed the Helena and Aurora Range to the west of Bungalbin Hill and camped at a rockhole *c.* 12 km north-west of Bungalbin Hill (Figure 1). They used this rockhole as a base camp for excursions back to the range (looking for a lost knife, 27th July), and further afield to Mt Manning (28th July) and the Hunt Range (29th July). On 30th July they moved west to a rockhole below the Jackson Range and spent the 31st exploring the Jackson Range, where Harper collected the type of *T. harperi* F.Muell. (Brooker 2012). As Drummond senior died on 26th March 1863, material collected on this expedition would not have been forwarded to him. Mueller was likely to have received this material directly, as he used three collections as types for taxa he described in 1865 (Mueller 1865).

Brooker (2006, 2012) documented 18 extant Harper specimens, 17 at the National Herbarium of Victoria (MEL) and one at the Royal Botanic Gardens Kew (K), and published images of 16. All of these specimens have Harper's collection notes attached (Table 1), with the exception of No. 3 (*Cheilanthes brownii*) which bears an annotation by Pemberton Walcott stating that it was 'with the rest of Harper's plants'. Brooker (2006) ascribes four of the numbered specimens (Nos. 2, 5, 8 and 10)

Table 1. List of extant Harper specimens showing collection numbers, location information and year collected. The location and date information for the 16 specimens seen is given in Mueller's hand except for *Cheilanthes brownii* and *Tetratheca harperi*, and is reproduced here verbatim. Harper's collection notes are attached for all 16 specimens except *Cheilanthes brownii*.

Number	Taxon	Location	Year	Comments
No. 1	*Hybanthus floribundus* subsp. *floribundus*	Eastern interior of W. Austr. Mount Marshall		
No. 2	*Boronia coerulescens* subsp. *spinescens*	E. interior of W. Austr. Lake Deborah		
No. 3	*Cheilanthes brownii*	E. interior of W. Austr	1864	No collection notes; Pemberton Walcott notes this specimen was with the Harper collections
No. 4	*Keraudrenia velutina* subsp. *velutina*	E. interior of W. Austr	1864	
No. 5	*Acacia jibberdingensis*	Eastern interior of W. Austr.		
No. 6	*Cephalipterum drummondii*	Eastern interior of W. Austr.	1864	
No. 7	*Eucalyptus orbifolia*	Interior of S.W. Austr		K specimen
No. 8	*Glycine rubiginosa*	Eastern interior of W. Austr.	1864	
No. 10	*Ptilotus obovatus*	Eastern interior of W. Austr.		Specimen not seen
No. 11	*Eremophila serrulata*	Eastern interior of W. Austral.	1864	Label inconclusive; *s.n.* in Brooker (2012), No. 11 in MEL database
No. 12	*Pimelea angustifolia*	Lake Sapphire		Location information in Harper's notes
No. 13	*Lawrencella davenportii*	Near Sapphire Lake		
s.n.	*Lawrencella davenportii*	Near Sapphire Lake		Specimen not seen
No. 15	*Rhodanthe chlorocephala* subsp. *splendida*	Eastern interior of W. Austr.		
No. 17	*Pityrodia terminalis*	Near Mount Walter		
No. 18	*Rhagodia preissii*	Eastern interior of W. Austr.		
No. 19	*Mirbelia microphylla*	Between Mt Churchman & Mt Marshal	1864	
s.n.	*Tetratheca harperi*	...high jasper range amongst rocks.		No Mueller label; location information in Harper's notes

to the 1861 expedition; however, given the sequence of numbers, the consistency of the labelling, and the date of 1864 on six of these specimens (including No. 8), we consider that they were all collected on the 1864 expedition (*cf.* Brooker 2006, 2012).

On the basis of the information in the expedition diaries and the known distribution of *T. aphylla* it seems almost certain that Harper collected the type of *T. aphylla* during the first expedition (on the southern flanks or the summit of Bungalbin Hill on 24th July 1861) and subsequently gave the specimen to Drummond. If this collection formed part of Drummond's private herbarium (as seems most likely), Mueller would not have received this material from Drummond's son until 1866 when he states in a letter (5th February 1866) to Bentham 'Within the last week I have received Drummonds plants from Swan River; the collection is in a very miserable state...' (Holmes *et al.* 2002).

If our interpretation of the origin of Harper's extant specimens is correct, then the type of *T. aphylla* is the only specimen from the 1861 expedition that has been located. We consider it likely that other specimens from this expedition that were incorporated into Drummond's private herbarium may yet be found in MEL.

Brooker's detailed research has established the connection between James Drummond senior and the Helena and Aurora Range through Charles Harper's expeditions, supporting Butcher's (2007) decision to epitypify *T. aphylla* on a collection from this locality rather than from the Newdegate area.

While the young explorers on these two expeditions went on to become stalwarts of the young Swan River Colony, influencing the institutions of Western Australia down to the current day, the members of the 1864 expedition in particular owed their lives to the aboriginal people through whose lands they travelled (Brooker 2006, 2012). Charles Harper's succinct quote 'There are greater things in life than cricket' stands as a fitting epitaph to the busy and productive lives these young men went on to lead (Brooker 2006, 2012).

Typfication

Tetratheca aphylla F.Muell.

Type: Western Australia, *s. dat.*, *J. Drummond s.n.* [Bungalbin Hill, Western Australia, 24 July 1861, *C. Harper s.n.*] (*holo*: MEL 1008033!). *Epitype*: Helena and Aurora Range, Western Australia [precise locality withheld for conservation reasons], 25 September 1995, *B.J. Lepschi* 1988 (*epi*, here designated: PERTH 04182898!; *isoepi*: CANB 500941 *n.v.*).

Acknowledgements

The mystery regarding the connection between Drummond and the Helena and Aurora Range would have persisted without the comprehensive compilation of the early explorers' diaries, interpretative mapping and botanical research recently published by Lesley Brooker. Kevin Thiele, Bruce Maslin and Juliet Wege are thanked for their comments on an earlier draft. RB thanks Jürgen Kellermann (AD) for bringing the invalid publication of the epitype in 2007 to her attention.

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