

A new species of *Bossiaea* (Fabaceae: Bossiaeae) from Victoria

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Abstract

Bossiaea vombata J.H. Ross is described from the Wombat State Forest, Victoria. The species is characterized by being rhizomatous, infertile, and having uniformly yellow or yellowish-white petals.

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Introduction

Among the tens of thousands of specimens accumulated by Cliff Beaglehole, is a sterile specimen (MEL 646202) of a leafless *Bossiaea* Vent. collected in May 1982 from the Musk Creek Reference Area in the Wombat State Forest, about one hundred kilometres north-west of Melbourne. At the time, the specimen was tentatively referred to *B. bracteosa* F.Muell. ex Benth.

In October 1995 my colleague Neville Walsh and I visited the Wombat State Forest in an attempt to re-locate the population from which Beaglehole had collected his specimen. At the end of an all-day search we chanced upon a small population of what was undoubtedly the same entity in full flower. As this locality is somewhat removed from the Musk Creek Reference Area, we concluded that this was not the population discovered originally by Beaglehole but a second population of the species. Numerous subsequent attempts to locate the original population have proved unsuccessful.

I returned to the site in late November 1995 to collect mature fruiting specimens and was surprised to find not a single fruit on the plants or on the ground beneath them. I assumed that I had waited too long before returning to collect fruiting material. The following year I visited the population in spring to find the plants in full bloom once again and watched as native bees gathered pollen as they traversed from one flower to another. I returned at three-weekly intervals to look for fruiting material but no fruits developed which suggested that something was amiss with the breeding system. An examination of some pollen in 1997 suggested that it was not fully formed which could possibly account for the failure of the plants to produce mature fruits. Although young fruits are initiated their development soon halts. The plants spread by rhizomes raising the possibility that the entire population is clonal.

As this Wombat State Forest entity differs from other species of *Bossiaea*, this opportunity is taken to describe it formally as a new species.



Bossiaea vombata J.H. Ross, sp. nov.

Bossiaea bracteosae F. Muell. ex Benth. affinis, a qua planta debiliore rhizomatosa sterili, vexillis et alis ubique flavis carinis ubique pallidus flavis, differt.

Type: VICTORIA. Wombat State Forest, [precise locality withheld for conservation purposes], 26.x.1995, J.H. Ross 3647 (holotype: MEL 2043441).

Erect branched rhizomatous shrub to 1.2 m high, glabrous or with occasional scattered hairs on the margins of the young cladodes especially on the new flush of growth, cladodes flattened, with ultimate branches 0.5–1.2 cm wide, scarcely or distinctly notched at the nodes, greyish-green, terminating in a blunt point. Leaves reduced to narrow ovate scales 1.0–2.5 mm long, dark brown, becoming blackish, glabrous except for marginal cilia on the very young growth, inconspicuously longitudinally striate, persistent. Flowers solitary at the nodes, seldom paired, the pedicels 1.0–2.5 mm long, glabrous; bracts imbricate, increasing in size from the outermost basal bract to the innermost, broadly ovate, the innermost 2.0–3.1 mm long, resembling the bracteoles, rigid, coriaceous, brown, glabrous, inconspicuously longitudinally striate, persistent; bracteoles broadly ovate to obovate-oblong, 2.8–3.7 mm long, 2.2–2.8 mm wide, brown, glabrous, inconspicuously longitudinally striate, soon caducous. Calyx glabrous externally except for cilia on the margins of the lobes, green apart from brown tips to the lobes: 2 upper lobes 1.7–2.2 mm long excluding a tube 2.4–3.3 mm long, slightly broader and longer than the 3 lower lobes, acute; 3 lower lobes 1.6–2.0 mm long, shorter than the tube, acute. Standard 9.0–9.9 mm long including a claw 2.5–2.8 mm long, 8.8–9.2 mm wide, uniformly yellow; wings 9.0–9.7 mm long including a claw 2.8–3.3 mm long, uniformly yellow; keel 9.0–9.8 mm long including a claw 3.0–3.5 mm long, uniformly yellowish-white. Stamen-filaments 6.8–8.8 mm long; anthers orange. Ovary 4.5–5.2 mm long, on a stipe up to 1.5 mm long, 4–6-ovulate, glabrous. Fruits and seeds unknown.

Distribution and habitat: Known from a single small population in the Wombat State Forest in south-central Victoria. Occurs in open dry *Eucalyptus radiata* DC. – *E. rubida* Deane & Maiden forest with an understorey of *Acacia melanoxylon* R.Br. on reddish-brown clay-loam.

Representative specimens: Wombat State Forest, Musk Creek Reference Area, 4.iv.1982, A.C. Beaglehole 70594 (MEL); Wombat State Forest, [precise locality withheld for conservation purposes], 28.xii.1997, J.H.Ross 3995 (MEL).

Conservation status: Endangered. The population is restricted to an area of about 20 square metres on the roadside where it is at risk from road-widening or logging activities. The apparent inability of the species to produce seed poses a further risk to its long-term survival.

Notes: Apart from *B. vombata*, there are four other leafless *Bossiaea* species in Victoria. Of these, *B. ensata* DC. is confined to low dense coastal heathland in far East Gippsland eastwards from Marlo and *B. walkeri* F.Muell. is confined to far NW Victoria. The latter differs obviously from the rest in having large red or salmon pendulous flowers in which the standard petal is much reduced in size relative to the keel petals. As in *B. ensata*, some of the petals in *B. bracteosa* and *B. riparia* Benth. are suffused in part or throughout with red, pink or orange. *Bossiaea vombata* is the only leafless *Bossiaea* species in Victoria with uniformly yellow or yellowish-white petals, and it differs also in being rhizomatous and infertile. *Bossiaea vombata* is most closely allied to *B. bracteosa*. The conspicuous brown scarious bracteoles in *B. vombata* are soon caducous as in *B. bracteosa*, but *B. bracteosa* grows as a much more robust plant in Victoria where it is confined usually to altitudes above 1000 metres, on basalt, granite or shallow soils over shale.

The identity of another leafless *Bossiaea* found on the Eyre Peninsula and first collected over 150 years ago requires elucidation (referred to *B. ensata* by Weber in *Fl. South Australia* 2:689, fig.372B, 1986). There are in MEL two sheets of material labelled in Mueller's hand as having been collected near Port Lincoln. Carl Wilhelmi is given as the collector of one sheet (MEL 650949) but the other (MEL 651098) is not attributed to a collector. Mueller did not collect on the Eyre Peninsula so it is likely that both sheets were collected by Wilhelmi. It is not known whether one collection is a duplicate of the other or whether they represent two different collections. Wilhelmi did collect duplicates as there is a specimen of his at K received from Sonder. None of the specimens bears a date but Wilhelmi visited the Eyre Peninsula twice, once in 1851 and

again in 1854 (Kraehenbuehl 1990). From the limited material available, the Eyre Peninsula material does not appear to be referable to any of the Western Australian species.

Etymology: Derived from the Latin *Vombatus*, the generic name of the Common Wombat, in reference to the restricted occurrence of this *Bossiaea* in the Wombat State Forest.

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Reference

Kraehenbuehl, D.N. (1990). 'Carl Wilhelmi, the seedsman from Dresden: his botanical endeavour in South Australia and Victoria', in P.S. Short (ed.), *History of Systematic Botany in Australasia*, pp 115–119. Australian Systematic Botany Society Inc.: Melbourne