

SHORT COMMUNICATION

***Daviesia localis* (Fabaceae: Mirbelieae), a new, short-range endemic from the northern Darling Range in Western Australia**

Daviesia localis Hislop, *sp. nov.*

Typus: north of Bindoon, Western Australia [precise locality withheld for conservation reasons], 6 November 2002, *F. Hort* 1904 (*holo*: PERTH 06230687; *iso*: CANB, MEL).

Erect, spreading *shrubs*, 1.5–3 m high and to *c.* 3 m wide, single-stemmed at ground level, apparently from a fire-sensitive rootstock. *Branchlets* terete, striate, glabrous, minutely papillose to ± smooth; apex spinescent. *Stipules* caducous, filiform, 0.2–0.3 mm long. *Phyllodes* rather sparsely distributed, shallowly antrorse to almost patent (45–80°), terete, striate, 2–8 mm long, 0.7–1.2 mm wide, recurved along the longitudinal axis; base decurrent; apex acuminate, pungent. *Unit inflorescence* 1 or occasionally 2 per axil, 4–7-flowered; axis 5–9 mm long, viscid. *Inflorescence bracts* oblong to narrowly elliptic, 0.7–1.1 mm long, not striate, strongly concave adaxially, with ± scarious margins. *Pedicels* 1.5–7.0 mm long, viscid. *Calyx* 3.8–5.2 mm long, including the 1.0–2.5 mm long receptacle; obscurely 2-lipped, the upper lip shallowly emarginate, lobes very broad and short, <0.3 mm long, with a zone of very short, vesicular hairs about the lobe apices, mostly on the inner surface, but frequently extending onto the margins and outer surface. *Corolla*: standard limb depressed ovate with an emarginate apex, 8.5–9.5 mm long (including the 2.0–2.3 mm claw), 8.5–10 mm wide, orange-yellow in distal half, red in the basal half and with a central, yellow, V-shaped ‘eye’; wings 6.0–6.7 mm long (including a claw 2.0–2.5 mm long), 3.0–3.5 mm wide, red, rounded and overlapping at the apex to conceal the keel, strongly auriculate at the base; keel 5.5–6.0 mm long, 2.8–3.2 mm wide, red, incurved with an obtuse apex, produced into 2 carinate gibbosities on the lateral surfaces. *Stamens* strongly dimorphic; the outer whorl of 5 with filaments flattened throughout and with 2-celled, basifixed anthers, *c.* 0.5 mm long; the inner 5 with filaments ± terete in the upper half (excluding the vexillary stamen), and anthers sub-dorsifixed with confluent cells, *c.* 0.3 mm long; the vexillary stamen with filament channelled adaxially in the upper half. *Style* 2.0–2.5 mm long, held at *c.* 90° to the ovarian axis. *Pod* turgid, obliquely obtriangular, acute, 15–18 mm long, 6–8 mm wide, pale to dark brown at maturity, obscurely reticulate. *Seeds* copper-brown, 6–7 mm long, 3.2–3.5 mm wide, funicle well-developed, cream-coloured, 4.0–4.5 mm long. (Figure 1)

Diagnostic characters. Distinguished from all other species in the genus by the following character combination: large growth habit (usually 2–3 m at maturity); striate branchlets; decurrent phyllodes which are relatively short (2–8 mm long), terete and pungent; viscid, elongate, multi-flowered inflorescences (axis 5–9 mm long and pedicels 1–7 mm long).

Other specimens examined. WESTERN AUSTRALIA: [localities withheld for conservation reasons] 28 Oct. 2001, *M. Hislop* 2352 (CANB, PERTH); 25 Nov. 2001, *M. Hislop* & *F. Hort* MH 2481 (CANB, PERTH); 30 Oct. 2014, *F. & J. Hort* FH 3903 (MEL, PERTH).



Figure 1. *Daviesia localis*. A – habit; B – flowers; C – inflorescence and immature pods. Photographs by F. & J. Hort from F. & J. Hort FH 3903.

Distribution and habitat. Currently known only from one population in the Bindoon area, which is located in the far north of the Jarrah Forest bioregion (Department of the Environment 2013). The plant occurs high in the landscape, growing in a sandy loam soil in the understory of Jarrah-Marri forest.

Phenology. The main flowering period appears to be between early October and the middle of November. Mature fruit has been collected during the last week of November.

Etymology. From the Latin *localis* (local, belonging to a given place), a reference to the very restricted geographical range of the new species.

Conservation status. To be listed as Priority One under Department of Parks and Wildlife Conservation Codes for Western Australian Flora (A. Jones pers. comm.). *Daviesia localis* is known from one scattered population of about 300 plants (Fred Hort pers. comm.) on land vested in the Department of Defence and in adjacent Unallocated Crown Land. The species has been the subject of several unsuccessful searches for new populations by Fred and Jean Hort, Research Associates of the Western Australian Herbarium.

Affinities. The closer relatives of this species are unlikely to be the congeners with which it is grouped in the key below. The elongate inflorescences, striate branchlets and phyllodes, and viscid inflorescence suggest a relationship with *D. longifolia* Benth. Recent molecular analysis of the genus (Cook *et al.* 2014) places the latter species in a subclade with *D. costata* Cheel and *D. pauciflora* Crisp. The phyllodes of *D. longifolia* vary considerably across its range from flat and up to about 10 mm wide to narrow and terete. In the case of those variants with the latter morphology, phyllode length provides the most obvious distinction between that species and *D. localis*. Whereas the longer, lower phyllodes of the terete-phyllode forms of *D. longifolia* vary between about 70–250 mm long (those subtending the inflorescences may be as short as 10 mm), in *D. localis* all phyllodes are 2–8 mm long. And whereas the phyllode apex in the new species is sharply pungent, it is mucronate only in *D. longifolia*, varying between innocuous and coarsely pungent. In regard to inflorescence and floral characters the two differ in the following ways: the inflorescence axes of *D. localis* are shorter, to 9 mm long (*cf.* rarely less than 10 mm in *D. longifolia*); the calyx is more obscurely 2-lipped, the sinus between the lips less than 0.3 mm long (*cf.* at least 0.5 mm long); while *D. localis* has a V-shaped yellow central ‘eye’, in *D. longifolia* it is unlobed and rounded apically. Fruit size provides a further distinction: 15–18 mm long and 6–8 mm wide in *D. localis*, 10–13 mm long and 4.5–5.5 mm wide in *D. longifolia*. There is also a significant difference between the two in terms of plant stature, with *D. longifolia* a low, spreading shrub to about 1.5 m, but usually less than 1 m, and *D. localis* a tall erect plant to 3 m (usually more than 1.5 m).

The two other species in the above-mentioned subclade, *D. costata* and *D. pauciflora*, differ in obvious ways from *D. localis* and are therefore not directly compared here with the new species.

Notes. While *D. benthamii* Meisn., *D. brachyphylla* Meisn., and *D. incrassata* Sm. subsp. *teres* Crisp are not thought to be closely related to *D. localis* they are in various ways superficially similar to the new species and are known to occur in the same general area. To facilitate identification comparisons are therefore given below.

Daviesia benthamii subsp. *acanthoclona* (F.Muell.) Crisp shares the large growth habit and usually short, decurrent and sparsely distributed phyllodes of *D. localis*. It differs in having branchlets with irregular, longitudinal wrinkles (rather than being regularly striate) and more strongly lobed but shorter calyces, to *c.* 3.5 mm long, including receptacle.

Daviesia brachyphylla has very similar phyllodes, but these are basally articulate (rather than decurrent). The irregular, longitudinal wrinkles of the branchlets (not regularly striate) and glaucous aspect provide further distinguishing features.

The decurrent phyllodes of *D. incrassata* subsp. *teres* are also superficially similar to those of *D. localis*. The former may be distinguished by its shorter stature, to 1 m tall, in having branchlets with irregular, longitudinal wrinkles (not regularly striate) and in its shorter inflorescence axes (to *c.* 3 mm long compared to 5–9 mm in *D. localis*).

Amended key to the species of *Daviesia*

The key to the species and subspecies of *Daviesia* (Crisp 1995) should be amended at couplet 78 (p. 1161) as follows:

- 78.** Phyllodes straight or gently incurved for most of their length but with an uncinatate apex; calyx 2.5–3 mm long; standard 4–5 mm wide **D. uncinata**
- 78:** Phyllodes ± straight or recurved along the longitudinal axis, but without an uncinatate apex; calyx 3.8–5.2 mm long; standard >7 mm wide
- 78a.** Plants glaucous, rhizomatous, to *c.* 100 cm high, but usually <60cm; phyllodes 5–70 mm long; inflorescence 1-flowered **D. rhizomata**
- 78a:** Plants not glaucous, mid- to dark green, non-rhizomatous, 150–300 cm high; phyllodes 2–8 mm long; inflorescence 4–7-flowered..... **D. localis**

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References

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