



Swainsona picta (Fabaceae), a new species from the Yalgoo bioregion, Western Australia

Robert W. Davis^a & Timothy A. Hammer^{b,c}

^a Western Australian Herbarium, Biodiversity and Conservation Science, Department of Biodiversity, Conservation and Attractions, Locked Bag 104, Bentley Delivery Centre, Western Australia 6983
Email: robert.davis@dbca.wa.gov.au

^b The University of Adelaide, School of Biological Sciences, Adelaide, South Australia 5005

^c State Herbarium of South Australia, Botanic Gardens and State Herbarium, Hackney Road, Adelaide, South Australia 5000

Abstract: The morphology of specimens collected near and on the Karara mining tenancy in the Yalgoo bioregion of Western Australia was evaluated and support the recognition of a new species, herein named *Swainsona picta* R.W.Davis & T.Hammer. The morphological differences between the new species and its presumed close relatives are discussed, and an identification key is given.

Keywords: Fabaceae, new species, *Swainsona*, taxonomy, Western Australia

Introduction

A specimen collected by botanical consultants C. Godden and J. Hruban in 2020 from the Yalgoo bioregion of Western Australia, near the Karara mine, was deposited at the Western Australian Herbarium (PERTH) and subsequently given the phrase name *Swainsona* sp. Karara (C. Godden & J. Hruban 24–26). A subsequent trip in 2021 to find new populations outside of the mining area by J. Hruban and M. Hrubanová was successful, and a second specimen was collected. In the present study, the morphology of these specimens was evaluated and found to support the recognition of this phrase-named taxon as a new species, which is formally described here as *Swainsona picta* R.W.Davis & T.Hammer.

Taxonomy

Swainsona picta R.W.Davis & T.Hammer, *sp. nov.*

Holotypus: 45 km ENE of Perenjori, Karara Rangeland Park, 24 Aug. 2021, J. Hruban & M. Hrubanová MJ21-02 (PERTH 09433392). **Isotypus:** CANB [to be distributed].

Swainsona sp. Karara (C. Godden & J. Hruban 24–26) Western Australian Herbarium, *FloraBase* <https://florabase.dpaw.wa.gov.au/> [accessed 25 Feb. 2022].

A small, open, annual *herb* to 5–15 cm high, 8–28 cm wide, with several short stems radiating from a slender taproot. *Stems* c. 0.8 mm wide, terete to slightly compressed, with fine, spreading to slightly ascending, basifixed hairs, to 1 mm long. *Stipules* ovate, 2.5–8 mm long, 2.5–6 mm wide; both surfaces evenly

Modified key to the species of *Swainsona* in Western Australia

Couplets 10 & 11 of the key provided by Davis & Hammer (2020) require modifications as follows:

- 10. Calyx lobes clearly longer than the calyx tube; upper wing surface with curved white marking *S. katjarra*
- 10: Calyx lobes clearly shorter than tube; upper wing surface without markings
 - 11. Leaves broadly obovate to ovate, unifoliate leaves common *S. unifoliolata*
 - 11: Leaves narrowly lanceolate to elliptic rarely with unifoliate leaves
 - 11a. Stem hairs appressed; pulvinus at base of peduncle obvious, dark in colour, hairy *S. oroboides*
 - 11a: Stem hairs patent; pulvinus at base of peduncle not apparent *S. picta*



Fig. 1. *Swainsona picta*. **A** habit at the type locality; **B** flower; **C** branch with two fruits. — J. Hruban & M. Hrubanová MJ21-02. Photos: J. Hruban & M. Hrubanová.

covered with long, fine, spreading hairs. *Leaves* 30–60 mm long, imparipinnate; petiole 20–30 mm long; lateral leaflets in 2–4 pairs, flat to slightly involute, linear to oblong (rarely obovate), 3.5–12 mm long, 0.7–3.5 mm wide, truncate to slightly emarginate, the adaxial surface mostly glabrous except for sparse, long, fine, spreading hairs towards the margins, the abaxial surface with a sparse, even covering of long, ascending, fine hairs; terminal leaflet similar in size, shape and indumentum to the lateral leaflets. *Racemes* 40–90 mm long, 1–3 (4)-flowered. *Peduncle* slender, angled, 0.6–0.7 mm wide, glabrous or with very sparse, appressed hairs; pulvinus absent or at least not obvious. *Bracts* ovate, 0.8–1.3 mm long, with sparse, fine hairs. *Flowers* purple, 6.5–7 mm long; pedicels 0.6–0.9 mm long, with dense, fine, ascending to spreading hairs; bracteoles not observed. *Calyx* with tube 1.8–2.3 mm long, slightly expanding towards the top, mostly glabrous or with a few fine hairs; calyx lobes triangular, 1.4–1.7 mm long, 0.7–0.8 mm wide, with sparse, spreading hairs along the margins. *Standard* slightly

longer than broad, purple with white eyes at base, 5.8–6.5 mm long, 5.3–5.7 mm wide; claw shortly tapering, 0.8–1.3 mm long. *Wings* oblong, constricted in the middle and slightly upwardly curved, purple fading towards the base, apex margin pale mauve, 3.8–4.2 mm long, 0.7–1.3 mm deep. *Keel* boat-shaped, slightly twisted, broadest towards the middle, purple and fading white towards the base, 7–7.5 mm long, 2.3–2.5 mm deep; auricles negligible; apex sharply hooked upwards. *Ovary* ellipsoid, c. 2.5 mm long, with a dense covering of spreading, fine, silky hairs to 2 mm long, the base of the hairs with distinct, purple-speckled markings. *Ovules* numerous. *Style* flattened, short, stout, and strongly upwardly curved, c. 3 mm long, with hairs along the adaxial edge, tuft of hairs on the abaxial edge present; apex geniculate. *Fruit* pendulous, ellipsoid to obovoid, 18–22 mm long, inflated, dorsally compressed, stipe elongated, 4.2–4.6 mm long, hairs long, fine, spreading, to 2 mm long, with prominent, purple, tuberculate bases. **Fig. 1.**

Diagnostic features. *Swainsona picta* can be separated from all members of the genus by the following combination of characters: stems with fine, spreading hairs; stipules ovate; leaflets in 2–4 pairs, linear to oblong; pulvinus absent at base of peduncle; style geniculate, with an abaxial tuft of hairs at the apex; mature fruits pendulous, ellipsoid to obovoid, 18–22 mm long, with a long stipe 4.2–4.6 mm long, appearing spotted due to the distinctive, purple, tuberculate bases of the long (to 2 mm), spreading hairs.

Distribution and habitat. The two recorded collections of *Swainsona picta* occur on Karara Station with one population within the Karara mine tenancy. It occurs in open shrublands or low woodlands of *Acacia umbraculiformis*, *Acacia kockii*, *Hakea recurva* and *Solanum lasiophyllum* over annual forbs and grasses on rocky slopes with red-brown sandy loam amongst decomposing granite.

Phenology. Both collections of *Swainsona picta* have been made in August when the plants were in flower and with the fruits almost mature or in early stages of development.

Conservation status. Listed under Department of Biodiversity, Conservation and Attractions' Conservation Codes for Western Australia, as Priority One under the name *Swainsona* sp. Karara (C. Godden & J. Hruban 24–26). Only two populations have been recorded; a single plant was recorded on the original specimen's label (PERTH 09315551), and "20+ plants" were recorded on the type specimen's label (PERTH 09433392). Potential threats are likely to be from mining activity and grazing by feral animals.

Notes. *Swainsona picta* is similar in morphology to a group of seven species within the genus, comprising *S. flavicarinata* J.M.Black, *S. disjuncta* Joy Thomps., *S. cyclocarpa* F.Muell., *S. halophila* Joy Thomps., *S. katjarra* R.W.Davis & T.Hammer, *S. unifoliata* F.Muell. and *S. oroboides* Benth. All these species can be recognised by having a geniculate style and a tuft of

hairs on the abaxial surface near the apex of the style (see Fig. 1 in Davis & Hammer 2020).

Swainsona picta is most similar to *S. oroboides*, which is widely distributed in the Eremaean Botanical Province of Western Australia (Beard 1990), with one record from Burnerbinmah Station in the Yalgoo bioregion. *Swainsona picta* can be clearly differentiated from *S. oroboides* by having long, basifixed, spreading hairs to 1 mm long on the stems, no obvious pulvinus at the base of the peduncle, and an elongated stipe. *Swainsona oroboides* has appressed hairs on the stems, which are basifixed and sometimes semi-medifixed, a conspicuous, hairy and dark-coloured pulvinus, short stipe, and fruit with long, fine, ascending hairs, lacking the coloured tubercles at the base.

Etymology. From the Latin *pictus* (painted), in reference to the numerous, prominent, purple spots on the maturing fruit.

Proposed vernacular name. Painted swainsona.

Additional specimen examined

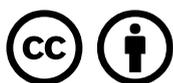
Karara Station, 16 Aug. 2020, C. Godden & J. Hruban 24–26 (PERTH).

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References

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