

## Taxonomic notes on the genus *Johnsonia* (Anthericaceae)

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### Abstract

Keighery, G.J. Taxonomic notes on the genus *Johnsonia* (Anthericaceae). *Nuytsia* 13: 479–481 (2001). A new subspecies, *Johnsonia pubescens* subsp. *cygnorum* Keighery, is described from the Swan Coastal Plain, in south-western Australia. New populations are listed for *Johnsonia inconspicua* Keighery, including one very disjunct population with a distinct variant; this species was previously known only from the type collection.

### Introduction

*Johnsonia* R.Br., an endemic Western Australian genus of five species of Anthericaceae, was included in Volume 45 of "Flora of Australia" (Keighery 1987). This paper describes a new taxon that was elucidated during field work on the Swan Coastal Plain for the floristic survey of the region (Gibson *et al.* 1994). New data on the distribution and morphological variation of *Johnsonia inconspicua*, previously only known from the type collection, are also given.

***Johnsonia pubescens* subsp. *cygnorum* Keighery, *subsp. nov.***

Differt a subsp. *pubescens* bracteae albus cum centralis virides et apex bruneolus, tepala viridi-alba.

*Typus:* Shire Rubbish Site, 2 km west of Serpentine, Western Australia, 29 September 1982, G.J. Keighery 5249 (*holo:* PERTH 01969501).

Rhizomatous tufted *herb* to 20 cm diameter. *Phylloclades* 30–45 cm long, 1–1.5 mm wide, sparsely pubescent. *Scape* densely pubescent, 10–15 cm long, awned bract 7–10 cm long. *Basal empty bracts* 5–16 mm long. *Floral bracts* narrowly ovate, 17–23 mm long, acute, white with central green stripes and fawn apex, sparsely pubescent to almost glabrous abaxially, margins finely ciliate. *Bracteoles* linear, c. 5 mm long, white. *Flowers* greenish-white. *Tepals* c. 6 mm long. *Anthers* c. 3 mm long, yellow. *Style* c. 4 mm long.

*Other collections examined.* WESTERN AUSTRALIA: Lowlands Property, 9 km WNW of Serpentine, 13 Aug. 1992, B.J. Keighery & G.J. Keighery 17 (PERTH); Lowlands Property, 9 km WNW of Serpentine, 12 Sep. 1992, B.J. Keighery & N. Gibson 739 (PERTH); Cardup Nature Reserve, R.H. Underwood 49/88 (PERTH).

*Distribution and habitat.* Grows on white sands often overlying clays in Jarrah (*Eucalyptus marginata*) over *Banksia* low woodland or Jarrah low woodland on the Ridge Hill Shelf geomorphic unit of the Swan Coastal Plain. Also collected from an outlier of Bassendean sands over alluvials on the Serpentine River.

*Phenology.* Flowering from September to November.

*Conservation status.* CALM Conservation Codes for Western Australian Flora: Priority Two. The taxon is very localized in distribution, in the Shire of Serpentine–Jarrahdale over a range of c. 40 km. Although the area is over 90% cleared, extensive survey has recorded populations at Lowlands Private Bushland (Keighery *et al.* 1995), a local Government reserve at Brickwood (Keighery & Keighery 1993a) and Cardup Nature Reserve (Keighery & Keighery 1993b).

*Etymology.* The epithet is from the Latin *cygnus* – swan, a reference to the Swan Coastal Plain, where this species occurs.

*Notes.* This very distinct subspecies of *Johnsonia pubescens* is found on the southern margin of the species range. There is a disjunction between the southernmost populations of subsp. *pubescens* at Canning Vale (32°04'S, 115°58'E) and the northernmost populations of subsp. *cygnorum* at Brickwood Bushland (32°18'S, 116°00'E). Subsp. *cygnorum* can be immediately distinguished from subsp. *pubescens* in having white floral bracts with a central green and fawn stripe and greenish flowers rather than white bracts with a central pink flush and pink/purple flowers. The new subspecies tends to be a larger plant than the typical subspecies, with thinner phylloclades and a narrowly cylindrical inflorescence at flowering (subsp. *pubescens* has bracts that open widely during flowering giving the inflorescence an ovoid shape). It was referred to as *Johnsonia* species A in the "Flora of the Perth Region" (Macfarlane 1987), however, at that time it was combined with the other species with a narrowly cylindrical inflorescence, *Johnsonia inconspicua* Keighery.

#### Notes on *Johnsonia inconspicua* Keighery

In Keighery (1987) this species was only known from the type locality. Subsequent surveys in the area located another two areas of occurrence. One of these is in a local Government Reserve (No. 20418) and the other is a large population, comprising several sub-populations, in road/rail reserves adjacent to (and extending marginally into) Yelverton State Forest.

In 1990 E.A. Griffin collected an unusual specimen of *Johnsonia* in fruit in Julimar State Forest (now Julimar Conservation Park) that he provisionally placed in *Johnsonia inconspicua*. In 1999 this population was relocated in flower, confirming that it is indeed a variant of *Johnsonia inconspicua*, some 300 km north of the southern populations.

This highly disjunct population differs in having flowers with a central purple stripe and the style longer than the anthers with the inflorescences displayed above the leaves. It would appear to be an outbreeding variant of this normally inbreeding species. While these are minor morphological differences a genetic study of the two variants could be illuminating.

*Collections examined.* WESTERN AUSTRALIA: intersection of Metricup and Metricup–Yelverton roads, Reserve No. 20418, 8 Nov. 1989, *G.J. Keighery* 11125 (PERTH); 3 km along Blythe Rd from Abbey farm road, in rail reserve adjacent to Yelverton State Forest, 8 Nov. 1989, *G.J. Keighery* 10969 (PERTH); Bottom of Blythe Road, Yelverton Forest, 8 Nov. 1989, *G.J. Keighery* 11043 (PERTH); Julimar Forest, Whittaker Rd, 16 Nov. 1990, *E.A. Griffin* 6238 (PERTH); Julimar Forest, Whittaker Rd, 11 Oct. 1999, *G.J. Keighery & N. Gibson* 2886 (PERTH).

*Conservation status.* CALM Conservation Codes for Western Australian Flora: Reassessed to Priority Three. The southern populations would be relatively secure if the road/rail reserve beside Yelverton Forest were added to this area. The northern population is in Julimar Conservation Park.

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