A new species of Anigozanthos Labill. from the Murchison River sandheaths of Western Australia

By S. D. Hopper*

Abstract

Anigozanthos kalbarriensis sp. nov. is described and illustrated. It is related to A. humilis Lindl., A. bicolor Endl. and A. gabrielae Domin.

Anigozanthos kalbarriensis Hopper sp. nov. (Figure 1).

Ab A. humile Lindl. lobis perianthii reflexis, ovariis semper rubris, staminibus 2 externis ex 4 centralibus dissitis, florescentia seriori, differt; ab A. bicolore Endl. et A. gabrielae Domin staminibus in perianthio in paribus 3 separatis insertis, differt.

 $Type: \pm 1.5$ km north of Lake Culcurdoo (north of Murchison River mouth), Western Australia— $\pm 114^{\circ}09'E$, 27°24'S, 29 Aug. 1969, *A. S. George* 9604. "In sand with *Acacia* scrub; flowers red and green outside, green inside." Holo: PERTH; iso: CANB, PERTH.

Herb with short rhizome, the leaves and scapes ephemeral. Roots thin, wiry. Rhizome horizontal, a few centimetres below ground level, covered with broad. glabrous blue-black bracts (leaf bases). Lowest leaves several, broadly linear, carinate in lower $\frac{1}{2}-\frac{2}{3}$, curved as in A. humilis Lindl., with ensheathing bases, acuminate, to 12 cm long, 3-10 mm wide, usually glabrous, but sometimes with tomentose margins. Intermediate leaves similar but less curved. Leaves on scape broadly linear, carinate, glabrous or sparsely tomentose, the margins usually tomentose, the lowest leaves up to 10 cm long, upper ones shorter. Scapes several, unbranched, 10-20 cm high, bearing single terminal racemes. Stems densely tomentose-hirsute above ground, with red branched hairs. Racemes of 3 to 20 flowers, densely tomentose-hirsute, red throughout except for perianths, which may be yellow suffused with red, green suffused with red, pale green or golden yellow, giving flowers a two-tone coloration. Pedicels at anthesis 2-4 mm long, each subtended by a subulate bract; bracts to 15 mm long on lowest pedicel, shorter above, tomentose abaxially, hirsute adaxially. Perianth 2.5-4.5 cm long, 1-2 cm wide when flattened, glabrous within. Perianth tube split on lower (anterior) side to within 2-10 mm of the ovary: *lobes* subulate, reflexed as in *A. bicolor* Endl., closely stellate-tomentose within, central (apical) lobes straight and 6–10 mm long, outer (lateral) lobes falcate and 8-14 mm long, all 2-4.5 mm broad at the base. Stamens inserted at three levels, the central and second upper pairs near the base of perianth lobes, 2.5-3.5 and 2-3 cm above the ovary respectively; the outer (lateral) pair low in the perianth, 1.3-2.2 cm above the ovary; filaments equal in length to anthers, 1.5-3.5 mm long. Style equal to or half the length of the perianth: stigma small. Ovary always red on the outside, 3-celled; ovules 15-30 per locule. Fruit hirsute, the hairs white, dehiscence loculicidal. Seeds pyramidal, 0.5-1.0 mm long, black, with shallow furrows on the surface.

Distribution: Western Australia-Murchison River sandheaths, within 40 km of the town of Kalbarri.

^{*} Botany Dept, University of Western Australia, Nedlands, Western Australia 6009. Present address: Western Australian Herbarium, George Street, South Perth, Western Australia 6151.



Figure 1. Photographs of a plant of *Anigozanthos kalbarriensis* sp. nov. from a population 3.7 km east of the Hawk's Head turn off on the road in to Kalbarri. Note the resemblance to *A. humilis* Lindl. in vegetative morphology, and the distinctive backward reflexion of the perianth lobes.

Specimens examined: Near Mt. Curious, lower Murchison River, W.A., 29 Aug. 1969, A. S. George 9619b (PERTH); 40 km E of Kalbarri, 3.7 km E of T.O. to Hawkshead Lookout, "In low proteaceous heath, winter-wet sandy flats, south side of road, recently burnt", 19 Aug. 1975, S. D. Hopper 126 (PERTH).

The new species is allied to *A. humilis* Lindl., from which it differs in having reflexed perianth lobes, consistently red ovaries, outer stamens more distant from the central four, a later flowering season (beginning in August), and a preference for winter-wet depressions in sandplain rather than hill slopes and rises. It is readily distinguished from *A. bicolor* Endl. and *A. gabrielae* Domin in having stamens inserted at three levels in the perianth.

Anigozanthos kalbarriensis appears to be a fire opportunist, occurring in large numbers the first spring after a bushfire and rapidly declining in subsequent years. It has been found in sympatry with *A. humilis* and hybrids at one locality. The two species showed some ecological segregation along soil moisture gradients associated with changes in topography: *A. kalbarriensis* occurred in wetter flats and depressions at the base of elevated rises occupied by *A. humilis.* Hybrids occurred mainly in ecotonal regions between these habitats. Hybrids also had lower pollen fertility than individuals of either parental species.

The variation in perianth colour shown by *A. kalbarriensis* is without parallel in the rest of the genus. The species should provide a rich source of colour variation of use in horticultural hybridization programmes. Present work by the author indicates that *A. kalbarriensis* can be successfully hybridized with all other species of *Anigozanthos* including *A. flavidus* DC., and that these synthetic hybrids can be brought to flower within 6–9 months of sowing under glasshouse conditions.

The specific epithet of the new species is taken from the town of Kalbarri which lies at the mouth of the Murchison River.

Acknowledgements

I would like to thank Mr. A. S. George for providing the Latin diagnosis, and Mr. M. Lucks for assistance with photography.

Field surveys and investigations of the population biology of *A. kalbarriensis* were supported by Grant No. 74/692 from the Australian Biological Resources Study Interim Council. Research leading to the description of the new species was undertaken while I was in receipt of a Commonwealth Postgraduate Research Award.



Hopper, S D. 1978. "A new species of Anigozanthos Labill. from the Murchison River sandheaths of Western Australia." *Nuytsia: journal of the Western Australian Herbarium* 2(4), 181–183. <u>https://doi.org/10.58828/nuy00039</u>.

View This Item Online: https://doi.org/10.58828/nuy00039 Permalink: https://www.biodiversitylibrary.org/partpdf/228654

Holding Institution Western Australian Herbarium

Sponsored by Atlas of Living Australia

Copyright & Reuse Copyright Status: In copyright. Digitized with the permission of the rights holder. License: <u>http://creativecommons.org/licenses/by-nc-sa/4.0/</u> Rights: <u>https://biodiversitylibrary.org/permissions</u>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at https://www.biodiversitylibrary.org.