

## New species of *Triodia* and *Plectrachne* (Poaceae) from the Kimberley

S.W.L. Jacobs

National Herbarium, Royal Botanic Gardens, Mrs Macquarie's Road, Sydney, New South Wales 2000

### Abstract

Jacobs, S.W.L. New species of *Triodia* and *Plectrachne* (Poaceae) from the Kimberley. Nuytsia 8(2): 219-223 (1992). Two new species of *Triodia*, *T. burbidgeana* and *T. epactia*, and two new species of *Plectrachne*, *P. caroliniana* and *P. bunglensis*, are described. The two *Triodia* species are related to *T. pungens*, *P. caroliniana* to *P. schinzii*, and *P. bunglensis* to *P. bynoei*. All are being described for the forthcoming "Flora of the Kimberley Region".

### Introduction

While preparing Flora treatments of the genera *Monodia* S.W.L. Jacobs, *Triodia* R. Br. and *Plectrachne* Henr. for the forthcoming "Flora of the Kimberley Region" it became clear that at least five taxa present did not have names. One of these, a species of *Triodia*, is being described by Bryan Simon. Of the four described here I have examined populations of three in the field.

Descriptions were based on specimens from PERTH, NSW, and SYD, and from field examination.

### *Triodia*

***Triodia burbidgeana*** S.W.L. Jacobs, sp. nov.

*T. pungenti* affinis sed lobis lemmatis minutis, habitu laxiore, differt.

*Typus*: Pool above Big Mertens Falls, Mitchell Plateau, 14° 49' S, 125° 42' E, Western Australia, 31 May 1988, S.W.L. Jacobs 5812 & P.G. Wilson (holo: NSW).

Resinous *perennial* forming loose hummocks with culms to 1.5 m tall. *Sheaths* to 8 mm wide, ± loose, persistent, glabrous; orifice with straight hairs to 5 mm long but these usually matted with resin; blade to 50 cm long. *Inflorescence* panicate, ± open, to 40 cm long. *Spikelets* 4-7-flowered, 4-8 mm long, pedicellate; pedicels from shorter than the spikelet to 3-4 times the length. *Glumes* ovate, mostly obtuse, often with an apical notch, subequal, 3.5-4.5 mm long; lower 5-nerved; upper 3-nerved. *Lemmas* 3-4 mm long, glabrous except along the margins, nerves in 3 groups of 3; lobes 3, minute, subequal. *Palea* slightly shorter than to subequal to the lemma. *Caryopsis* not seen.

*Other specimens examined.* WESTERN AUSTRALIA: Surveyors Pool, Mitchell Plateau, *J.S. Beard* 8239 (PERTH); near Solea Falls, Drysdale River, *A.S. George* 13750 (PERTH); Surveyors Falls, Mitchell Plateau, *A.S. George* 13137 (PERTH); Carlia Creek, base of Carson Escarpment, *A.S. George* 13835, 13923 (PERTH); Morgan Falls, 15° 02' S, 126° 40' E, *A.S. George* 14070 (PERTH); Cracticus Falls, 14° 47' S, 127° 05' E, *K.F. Kenneally* 4176 (PERTH); Lake Argyle, *K.F. Kenneally* 7528 (PERTH).

*Distribution.* Found throughout the Gardner District of the Northern Botanical Province.

*Habitat.* Stony ranges and gorges.

*Flowering period.* Mainly during or shortly after the Wet.

*Conservation status.* Preserved in Drysdale River National Park and common on the Mitchell Plateau. Since its habitat is not under undue pressure from grazing, it is reasonably secure under present management regimes.

*Etymology.* Named in honour of Nancy Tyson Burbidge who, amongst her numerous contributions to Australian systematic botany, provided much of our knowledge on the genus *Triodia*.

*Notes.* This is *Triodia* sp. *B* of the "Flora of the Kimberley Region". Related to *T. pungens* but differing in the minute lemma lobes, more open habit, and rocky habitat.

***Triodia epactia*** S.W.L. Jacobs, sp. nov.

*T. pungenti* affinis sed inflorescentia angustiore densioreque, foliis glaucis, habitatione (in thiniis calcareis), differt.

*Typus:* Behind beach, southern end of 80 Mile Beach, near turnoff, Western Australia, 3 August 1970, *R.C. Carolin* 7581 (holo: NSW; iso: SYD).

Hummock-forming resinous *perennial* with culms to c. 1 m tall. *Sheaths* 4-6 mm wide, ± loose, persistent, glabrous; orifice with a few short hairs though these mostly matted with resin; ligule c. 1 mm long, membranous, ciliate with short hairs; blade glaucous, to c. 30 cm long, becoming curved with age. *Inflorescence* narrow, to c. 30 cm long, the spikelets arranged racemosely and densely along alternate or whorled lateral branches usually less than 2.5 cm long. *Spikelets* shortly pedicellate, 5-8-flowered, to 10 mm long. *Glumes* ovate to elliptic, acute, 3-nerved, subequal, 2.5-4 mm long. *Lemmas* c. 4 mm long, hairy along the margins and the midrib especially towards the base, callus hairy, nerves 3 or in 3 groups; lobes 3, subequal, 1-1.5 mm long. *Palea* extending c. half way up the lobes. *Caryopsis* not seen.

*Other specimens examined.* WESTERN AUSTRALIA: 'Anna Plains' Station, *N.T. Burbidge* 1454 (PERTH); 'Wallal Downs' Station, 80 Mile Beach, *N.T. Burbidge* 1494a (PERTH); Cape Keraudren, *R.D. Royce* 1952 (PERTH).

*Distribution.* Restricted to the 80 Mile Beach of the Dampier District in the Northern Botanical Province.

*Habitat.* Calcareous coastal sand dunes.

*Flowering period.* Apparently flowering in response to rain.

*Conservation status.* Of restricted habitat and distribution; apparently not threatened by current land management practices.

*Etymology.* Named for its maritime habitat, the latinised form of the Greek adjective *epaktios* meaning "coastal".

*Notes.* This is *Triodia* sp. C of the "Flora of the Kimberley Region". Closely related to *T. pungens* but differing in the more contracted inflorescence, the glaucous foliage, and the calcareous dune habitat.

The key below summarises the distinctions between the new species and *T. pungens*.

- |   |                       |
|---|-----------------------|
| 1. Lemma lobes <1 mm long .....   | <i>T. burbidgeana</i> |
| 1.* Lemma lobes >1 mm long .....  | 2                     |
| 2. Leaves glaucous; inflorescence tight and compact though sometimes interrupted, spikelets racemose and loosely or compactly secund along alternate lateral branches or alternate clusters of lateral branches ..... | <i>T. epactia</i>     |
| 2.* Leaves bright green; inflorescence open and loose, spikelets not conspicuously racemose or secund along alternate lateral branches .....  | <i>T. pungens</i>     |

### Plectrachne

***Plectrachne caroliniana*** S.W.L. Jacobs, sp. nov.

*P. schinzii* affinis sed aristas glumisque brevioribus, lemmatibus glabris plerumque longioribus, differt.

*Typus:* Drysdale River, 50 miles [80 km] NNW of 'Gibb River' Homestead, Western Australia, 30 August 1954, M. Lazarides 4816 (holo: NSW; iso: PERTH(2), CANB).

Hummock-forming resinous *perennial* with culms to c. 1.5 m tall, frequently much branched at the base. *Sheaths* 2-5 mm wide, smooth, persistent, margins glabrous; orifice with straight hairs to 4 mm long; ligule a row of hairs to 4 mm long; blade to c. 40 cm long but often much shorter, with stomatal grooves not distributed uniformly over the abaxial surface, more or less pungent-pointed, glabrous, longer older leaves may be curved. *Inflorescence* paniculate, open, to 25 cm long, the branches more or less erect except at anthesis. *Spikelets* shortly to distinctly pedicellate, 12-20 mm long (including awns), 3-5-flowered, lowest 1-3 fertile. *Glumes* linear-lanceolate, subequal, long-acute, translucent, 3-5-nerved, 9-12 mm long. *Lemmas* thickened below, the entire portion 5-7 mm long, usually sparsely hairy; lobes 3, each tapering gradually into an awn, lobe + awn 9-10 mm long, the central usually a few mm longer than the laterals; callus 1-2 mm long. *Palea* as long as entire portion of lemma, bitextured, chartaceous below, membranous above. *Caryopsis* not seen.

*Other specimens examined.* WESTERN AUSTRALIA: 158 miles [250 km] from Broome on Great Northern Highway towards Fitzroy Crossing, R.C. *Carolin* 7475 (SYD); Cape Leveque to One Arm Point Track, K.F. *Kenneally* 10656 (PERTH).

*Distribution.* Recorded from near the Drysdale River in the west of the Gardner District, and to the south of the Kimberley in the Dampier District, both in the Northern Botanical Province.

*Habitat.* Sandy soils.

*Flowering period.* Flowering during the Wet.

*Conservation status.* Does not appear particularly common from the collections but has been confused with both *P. schinzii* and *P. pungens*, two widespread and common species. Status unknown.

*Etymology.* Named in honour of Roger C. Carolin, for his contributions to, and beneficial influence on, Australian plant systematics.

*Notes.* This is *Plectrachne* sp. A of the "Flora of the Kimberley Region". Similar to *P. schinzii* but differing in having shorter awns and glumes, and lemmas glabrous and generally longer.

***Plectrachne bunglensis*** S.W.L. Jacobs, sp. nov.

*P. bynoei* affinis sed aristas longioribus, lemmatibus plerumque longioribus, inflorescentia contracta, differt.

*Typus:* Piccaninny Creek Gorge, 15 km SE of Bungle Bungle Outcamp, Bungle Bungle Range, NE Kimberley, 17° 27' S, 128° 25' E, Western Australia, 4 April 1985, *M.I. Blackwell* BB60 (PERTH).

Hummock-forming resinous *perennial* with culms to c. 1.5 m tall. *Sheaths* 2-5 mm wide, with scattered hairs, persistent; orifice and collar pilose with hairs to 3 mm long but these frequently matted with resin; ligule a row of hairs to 3 mm long often matted with resin; blade to c. 40 cm long but often much shorter, with the 'soft' type of anatomy, more or less pungent-pointed, glabrous except sometimes for a few hairs extending up the abaxial surface from the collar. *Inflorescence* dense and narrow, to 30 cm long and 2 cm wide (including awns), the branches erect. *Spikelets* shortly pedicellate, 10-20 mm long (including awns), 3-5-flowered, lowest 1 fertile. *Glumes* linear-lanceolate, subequal, long-acute, translucent, 1-nerved, 5-7 mm long. *Lemmas* not thickened below, the entire portion 2-3 mm long, narrow-ovate, hairy on the midrib and margins, 3-awned, the awns unequal; central awn the longest, to 20 mm long; lateral awns usually unequal, 0-5 mm. *Callus* less than 0.5 mm long, poorly developed. *Palea* subequal to entire portion of lemma, uniform in texture. *Caryopsis* ± cylindrical, 2 mm long, embryo c. 25% the length.

*Other specimens examined.* WESTERN AUSTRALIA: Piccaninny Creek Gorge, Bungle Bungle Range, *M.I. Blackwell* BB466 (PERTH); between Njitparriya and Dilmariyu, 17° 21' S, 128° 21' E, Bungle Bungle Range, *S.J. Forbes* 2573 (PERTH); 17° 22' S, 128° 22' E, Bungle Bungle Range, *K.F. Kenneally* 9254 (PERTH); Cathedral Gorge, 17° 29' S, 128° 22' E, Bungle Bungle Range, *K.A. Menkhorst* 821 (BRI, DNA).

*Distribution.* Restricted to the Bungle Bungle Range in the Hall District of the Northern Botanical Province.

*Habitat.* Sandstone cliffs and gorges.

*Flowering period.* Flowering and fruiting in response to rain.

*Conservation status.* Restricted to the Bungle Bungle National Park. Status unknown.

*Etymology.* Named for the known region of occurrence, the Bungle Bungle Range.

*Notes.* This is *Plectrachne* sp. B of the "Flora of the Kimberley Region". Similar to *P. bynoei* but differing in having longer awns, a usually larger lemma, and a narrow compact inflorescence.

The key below distinguishes the new species from related species.

- |  |                       |
|--|-----------------------|
| 1. Glumes >9 mm long; basal section of lemma thickened .....   | 2                     |
| 1.* Glumes <9 mm long; lemma uniform in texture, sometimes thickened below<br>in <i>P. mollis</i> .....  | 4                     |
| 2. Callus of fertile floret <0.5 mm long; entire part of lemma 2-3 mm long, often<br>divided to within 1 mm of thickened base .....                                    | <i>P. pungens</i>     |
| 2.* Callus of fertile floret >1 mm long; entire part of lemma 3-4 mm long, usually<br>with >1 mm undivided above thickened base .....                                  | 3                     |
| 3. Longest awns 9-10 mm long; glumes 9-12 mm long; entire portion of lemma<br>glabrous, 5-7 mm long .....  | <i>P. caroliniana</i> |
| 3.* Longest awns >12 mm long; glumes > 12 mm long; entire part of lemma<br>usually hairy, 4-6 mm long .....  | <i>P. schinzii</i>    |
| 4. Longest (central) awn of lowest lemma >10 mm long; inflorescence dense,<br>the branches appressed to main axis; only recorded from the<br>Bungle Bungle Range ..... | <i>P. bunglensis</i>  |
| 4.* Longest (central) awn of lowest lemma <10 mm long; inflorescence more<br>or less open, the branches flexuose .....   | 5                     |
| 5. Leaves mostly 0.5 mm or less in diameter when folded; paleas bitextured,<br>chartaceous below, membranous above .....   | <i>P. mollis</i>      |
| 5.* Leaves mostly 1 mm or more in diameter when folded; palea uniform in texture .....   | <i>P. bynoei</i>      |

### Acknowledgements

Some of the field work was undertaken during the Kimberley Research Project, Western Australia, 1988. I thank the organisers, the Royal Geographical Society and the Linnaean Society of London, and the sponsors for being able to take part. I also thank Karen Wilson for the Latin diagnoses and comments on the manuscript.