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Additional information on *Ramphotyphlops aspina* Couper, Covacevich & Wilson 1998 (Reptilia: Typhlopidae), a poorly known blind snake from the Mitchell Grass Downs of Queensland

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ABSTRACT

Blind snakes (Typhlopidae: *Ramphotyphlops*) are relatively poorly known compared to most other Australian reptiles. One quarter of Australia's species are known from one specimen or one location only. *Ramphotyphlops aspina* Couper, Covacevich and Wilson is known from two specimens collected within 22 km of each other in the Mitchell Grass Downs Bioregion of Queensland. A third specimen is discussed here, from a location 470 km from the previous specimens, also within the Mitchell Grass Downs. The collection localities of all *R. aspina* specimens suggest it may be a Mitchell Grass Downs endemic. □ *blind snake, Ramphotyphlops aspina, Mitchell Grass Downs, Queensland.*

A *Ramphotyphlops* specimen collected near Julia Creek in the Mitchell Grass Downs bioregion of central Queensland is described. This specimen closely conforms morphologically to *Ramphotyphlops aspina* Couper, Covacevich & Wilson, 1998. Prior to this specimen, only two individuals of *R. aspina* were known, both from near Barcaldine, also in the Mitchell Grass Downs. These are the holotype (QMJ51541) and a paratype (QMJ7). This third specimen represents a known-range extension of 470 km for *R. aspina*. It is in the collection of the Queensland Museum, registered as QMJ91822.

MATERIALS AND METHODS

Measurements were taken with a Sontax Digital caliper. As well as comparing QMJ91822 with the original description of *Ramphotyphlops aspina* (Couper *et al.* 1998), direct comparison was made with the holotype and paratype, to see if any obvious differences could be discerned. Length, and width at widest point,

of rostral scales of all specimens were measured from above.

QMJ91822 was collected under a small rock from relatively featureless open plains, south of Julia Creek at approximately 20.77°S, 141.74°E (GDA94). Collection locations for all specimens of *Ramphotyphlops aspina* were checked against Regional Ecosystem (RE) mapping in the Queensland Regional Ecosystem Description Database (Environmental Protection Agency 2005).

Area calculations for minimum convex polygon and RE extents were calculated using XTools Pro in ESRI ArcMap 10.0. For area calculations, Geoscience Australia Lambert projection in GDA 1994 was used.

RESULTS

Specimen QMJ91822 conforms closely to the description given in Couper *et al.* (1998) as follows: lacks a caudal spine (Fig. 1); 18 midbody scale

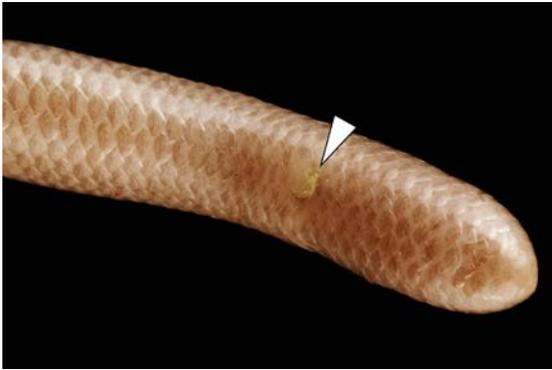


FIG. 1. *Ramphotyphlops aspina* tail tip showing lack of terminal spine. Arrow shows position of vent. QMJ91822 after preservation.

rows; 437 ventrals scales; 14 subcaudal scales, not including terminal scale; SVL 226 mm; tail length 6mm (2.6% SVL); body width 3.7 mm (1.6% SVL); head width 2.5 mm (1.1% SVL); a bluntly rounded snout when viewed from above; head slightly flattened when viewed

from the side; rostral scale elongate, tapering slightly caudally both above and below (38% of head width, as measured at widest dorsal part of rostral); rostral narrower underneath the head (23.5% of head width as measured at the level of the eye) and with parallel margins; rostral length/width from above = 1.44 (QM J51541 = 1.44, QMJ7 = 1.36); nasals broadly separated by prefrontal; prefrontal larger than frontal; supraoculars broadly separated by frontal; nostrils inferior and near snout apex with nasal cleft extending to second supralabial, and also extending dorsally so that it is visible from above; eye small and distinct in life but almost indistinguishable in preservative, located below ocular/supraocular junction; caudally, the ocular overlaps two postoculars and parietal; first supralabial the smallest, overlapped by rostral lobe of nasal; second supralabial larger, overlapped by rostral lobe and caudal lobe of nasal and preocular; third supralabial slightly larger than second, overlapped by preocular, and overlapping



FIG. 2. *Ramphotyphlops aspina*, QMJ91822 colour in life.

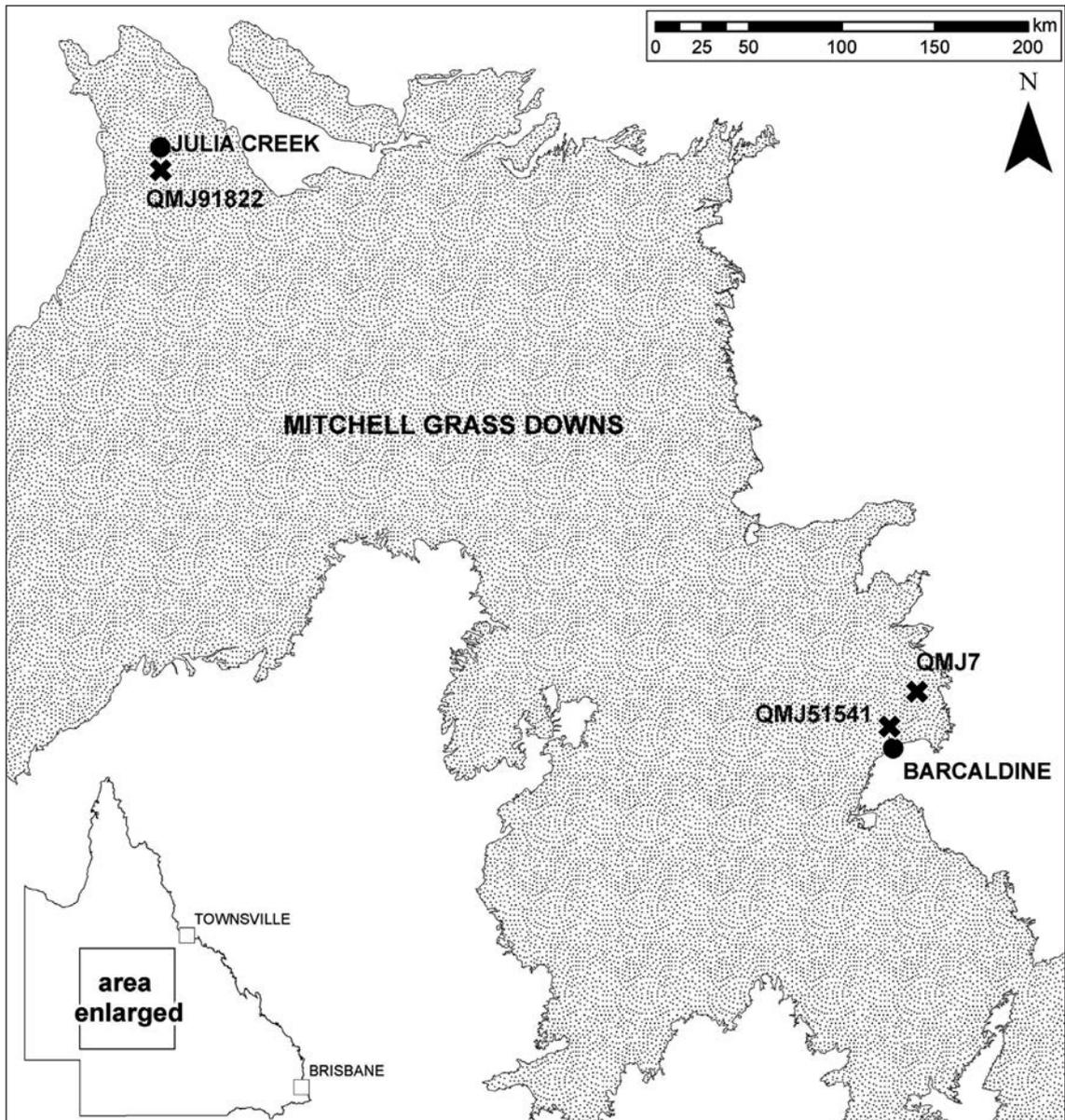


FIG. 3. Map showing locations of all known specimens (QMJ numbers) of *Ramphotyphlops aspina*.

ocular for about 1/3 of supralabial's height; fourth supralabial much the largest, elongate, overlapped by ocular; mental the same width as postmental; infralabials three, with the third being slightly larger than the first two; microtubercles of head sparse, but most

abundant on lower surfaces of nasals, but none visible on lower surface of rostral; glands not visible along margins of head shields.

Colour in Life. The overall appearance of the live specimen was a light pink colour



FIG. 4. *Astrebla* grassland south of Julia Creek, where QMJ91822 was collected. Photo courtesy Stephen Malone Photography.

(Fig. 2). The scales towards the anterior and posterior of the animal have a pattern of a curved darker band around the base, which is visible through the overlying scale. This gives the appearance of posterior scales overlapping those anterior to them, when the opposite is the case. The pattern is present, but much reduced, in the midbody region. This pattern is present, but much faded, in QMJ7 and QMJ51541. Colour is slightly paler ventrally, with some internal organs visible as darker patches under the scales. The eyes are visible as small and distinct dark spots beneath the margin of the supraocular and ocular scales. The tongue is a uniform translucent cream.

DISCUSSION

Ramphotyphlops aspina is a poorly known species, but distinctive for being the only Australian Typhlopidae snake lacking a terminal tail spine (Couper *et al.* 1998). Unfortunately, genetic material is not available for the two

previous museum specimens. Specimen QMJ7 was donated to the Queensland Museum in 1911 (Couper *et al.* 1998) and is not well preserved. Specimen QMJ51541 was donated in 1990 and was formalin fixed with no genetic vouchers taken. Thus, identification of QMJ91822 is entirely reliant upon morphological characters. However, given the close conformity of QMJ91822 to the original description there can be little doubt that it is *R. aspina*.

The location of QMJ91822 represents a known-range extension of approximately 470 km to the northwest of the previous specimens (Fig. 3).

Mitchell Grass grasslands, which dominate the Mitchell Grass Downs bioregion, have relatively low vertebrate richness (Sattler & Williams 1999). Despite its vast area, approximately 13.8% of Queensland, there are relatively few endemic species. Among the reptiles there are five specialists of Mitchell Grass grasslands on cracking clay soil (*Ctenotus agrestis*, *C. schevilli*, *Pogona henrylawsoni*, *Varanus spenceri*, *Pseudechis colletti*, Sattler & Williams 1999; Wilson 2005), that

Additional information on *Ramphotyphlops aspina*

are endemic, or nearly so, to the Mitchell Grass Downs bioregion. The three known specimens of *Ramphotyphlops aspina* were collected within the Mitchell Grass Downs bioregion (Fig. 3; Sattler & Williams, 1999), suggesting *R. aspina* may be a Mitchell Grass Downs endemic. QMJ91822 was collected from open treeless plains south of the town of Julia Creek. Ground layer vegetation was dominated by Mitchell Grasses *Astrebla* spp. The area is mapped as regional ecosystem 4.9.1; "*Astrebla lappacea* ± *Aristida latifolia* ± *Panicum decompositum* grassland on fresh cretaceous sediments. Deep grey and brown cracking soil." (Sattler & Williams, 1999), and this is consistent with the ground layer species composition observed at the point of collection (Fig. 4). QMJ51541 was from mixed REs 4.9.2 and 4.9.1 which are both *Astrebla* spp. grasslands on cracking clay soils. QMJ7 was from near the boundary of RE 4.9.1 and a mix of several REs which include open woodlands of *Eucalyptus* spp. and *Acacia cambagei*, and *Atriplex* spp. or *Astrebla* spp. grasslands in an alluvial landzone.

Ramphotyphlops aspina is not listed under Australian or Queensland legislation (Australian Government, 1999; Queensland Government, 2006) or the IUCN Red List (IUCN, 2012). With three known specimens, *R. aspina* could reasonably be listed as Data Deficient. However, it seems likely that *R. aspina* fits the criteria for classification as Least Concern. A minimum convex polygon between the three records gives an area of 5284 km². A reasonable estimate of suitable habitat area is probably the extent of REs 4.9.1 and 4.9.2, both of which have greater than 30% of original extent remaining and are subject to little on-going clearing (Accad *et al.* 2006; Sattler & Williams 1999). The estimated area dominated by either of these REs is 79634 km², which is approximately 33% of the area of the Mitchell Grass Downs bioregion.

QMJ91822 was notable because it did not, despite a significant amount of handling (including close observation with a hand lens to attempt identification), emit the foul-smelling liquid from its anal gland that is the usual behaviour in *Ramphotyphlops* (pers. obs.; Cogger, 2000). It also did not dig the tail tip into the author's hand, a common behaviour in blind snakes when captured (pers. obs.). This second

point was what initially alerted the author to the fact that the snake was *R. aspina*.

Blind snakes are an extremely secretive group, with 10 of Australia's 42 species (*R. batillus*, *howi*, *longissimus*, *margaretae*, *micromma*, *nema*, *robertsi*, *splendidus*, *yampiensis*, *yirrikalae*) being known from one specimen or one location only. For many of these species it is highly likely that targeted surveys will uncover more records and locations that will extend the known extents of occurrence as has happened with *R. aspina*.

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