

Memoirs of the Queensland Museum | **Nature** **63**

Queensland Museum Network respectfully acknowledges the Traditional Owners and Custodians of the lands, seas and regions across the state of Queensland.

© The State of Queensland, Queensland Museum 2021

PO Box 3300, South Brisbane 4101, Australia
Phone 06 7 3840 7555
Fax 06 7 3846 1226
Email qmlib@qm.qld.gov.au
Website www.qm.qld.gov.au

National Library of Australia card number
ISSN 0079-8835 Print
ISSN 2204-1478 Online

NOTE

Papers published in this volume and in all previous volumes of the *Memoirs of the Queensland Museum* may be reproduced for scientific research, individual study or other educational purposes. Properly acknowledged quotations may be made but queries regarding the republication of any papers should be addressed to the Editor in Chief. Copies of the journal can be purchased from the Queensland Museum Shop.

A Guide to Authors is displayed at the Queensland Museum web site www.qm.qld.gov.au

A Queensland Government Project
Typeset at the Queensland Museum

Male Combat in the Yellow-Faced Whipsnake (*Demansia psammophis*).

Memoirs of the Queensland Museum - Nature. 63: 26. 2021. Among the Australian elapid snakes, male combat is a regularly recorded behaviour, with larger and stronger combatants presumably securing mating rights over smaller rivals (Greer 1997; Shine 1994). Numerous taxa display this behaviour, including various members of the genera *Austrelaps* (Shine 1991; Jenner 2004), *Cryptophis* (Shine, 1984), *Demansia* (Greer, 1997; Covacevich, 1994), *Hemiaspis* (Shine 1987; Greer 1997), *Notechis* (Greer 1997; Fearn & Staubman, 2001), *Oxyuranus* Shine, 1991; Greer 1997; McRae & Covacevich 1997), *Parasuta* (Turner 1992; Greer 1997), *Pseudechis* (Shine, 1991; Greer 1997, Lloyd & Trembath 2010) and *Pseudonaja* (Shine 1991; Greer 1997; Clemann *et al.* 2010). Although there have been prior combat observations in *D. psammophis* (photos by John Weigel circa 2010, pers. comm. Rick Shine), here I present the first published instance of male combat behaviour in this species (see Fig. 1, video footage also available on request from author).

On the 29th of October 2020 at 9:30 am, two *Demansia psammophis* were observed entangled and wrestling at Oxley Creek Commons in Brisbane, QLD, Australia. The snakes were photographed (Fig. 1) and filmed on a DSLR camera. A single snake was initially spotted on the north side of a drainage culvert around 9.15 am, known colloquially as Snake Gulley (-27.541012 S, 152.994962 E, WGS84, Fig. 2), before fleeing into the creek area. Returning to the culvert some 15 minutes later, two snakes were found in the same location as the first individual. The combatants were approximately 30 cm and 35cm in Snout Vent Length (SVL) respectively, based on best visual estimate. While these individuals are small for mature *D. psammophis*, mature adults have been recorded at 318 mm in Greer (1997). Both were interlocked and occasionally rolling in rapid succession, each attempting to press the body and head of the other downward, often while both moving in a backward direction. The pair appeared to mainly fight in a low, horizontal posture, typical of small and lightly built species, and I did not observe the paired intertwining and raising of combatants' heads, followed by downward slamming, as has been noted in larger and more muscular elapids (Shine 1991, 1994). The pair continued wrestling over an area of perhaps six square meters, mostly on the grassy banks but occasionally entering the shallow edge-waters of the drainage. This behaviour continued until 9:37 am. Considering the early pass of the area and observation of just one individual around 9.15 am (give or take five minutes), this behaviour must have lasted for at least seven but no longer than 22 minutes, whereupon the seemingly smaller snake decoupled from the larger individual and fled northward along the north-eastern drainage bank with the larger snake in pursuit, until both were lost from sight. While neither snake was subsequently captured for explicit sex determination, the author has previously observed mating in this species, noting that it is much more docile than the observed combative wrestling.

Male combat in this species is expected, with previous work by Shine (1994) demonstrating the prevalence of male combat in sexually dimorphic snake species with larger males. This bias towards larger males is evident in *D. psammophis*, with a mean SVL of 52.5 cm for females and 57 cm for males (Shine, 1994). With regard to *D. psammophis*, Shine (1994) previously noted; "combat not reported for this species, but inferred because it occurs in congeners". Indeed, Covacevich *et al.* (1994) recorded male combat in the congeneric *Demansia vestigiata*, and photographic records of male combat in this species are available online



FIG. 1. *Demansia psammophis* in combat.



FIG. 2. Location.

(<https://www.ecologyasia.com/verts/snakes-png/black-whipsnake.htm>). In view of these observations, it seems reasonable to suggest that male combat may be ubiquitous in *Demansia* spp.

Literature Cited

- Covacevich, J.A. 1994. Male combat in the black whip snake *Demansia vestigiata*. *Memoirs of the Queensland Museum* 31(1): 52.
- Clemann, N., Lyon, J., Trembath, D., Talbot, N. & Boulton, T. 2010. Observations of combat in the eastern brown snake *Pseudonaja textilis* (Serpentes: Elapidae) from south-eastern Australia. *Herpetofauna*. 40. 88-92.
- Fearn, S., & Staubmann, M. 2001. A record of intraspecific combat in free ranging Tasmanian tiger snakes *Notechis scutatus* (Serpentes: Elapidae). *Herpetofauna* 31, 69-71.
- Greer, A. 1997. The Biology and Evolution of Australian Snakes. (Surrey Beatty & Sons: Sydney). Pp: 148-149, 201, 215.
- Jenner, B. 2004. Male ritual combat in the pygmy copperhead snake (*Austrelaps labialis*: Elapidae). *Herpetofauna* 34: 17-1.
- Lloyd, R. & Trembath, D. F. 2010. Male combat in mulga snakes *Pseudechis australis* (Serpentes: Elapidae): A series of observations from Northern Australia. *Herpetofauna*: 40(1):16-22.
- McRae, P. D. & Covacevich, J. 1997. Combat and copulation in *Oxyuranus microlepidotus* (Elapidae). *Memoirs of the Queensland Museum* 42(1): 104.
- Shine, R. 1984. Reproductive biology and food habits of Australian elapid snakes of the genus *Cryptophis*. *Journal of Herpetology*. 1, 8: 33-39
- Shine, R. 1987. Food Habits and Reproductive Biology of Australian Snakes of the Genus *Hemiaspis* (Elapidae). *Journal of Herpetology*. 21, 1: 71-74.
- Shine, R. 1991. Australian Snakes: A natural history. (Reed Books: Sydney). 119-120.
- Shine, R. 1994. Sexual size dimorphism in snakes revisited. *Copeia* 1994(2): 326-346.
- Turner, G. 1992. Courtship behaviour and mole combat in the little whip snake *Rhinoplocephalus flagellum*. *Herpetofauna* 22(1): 14-21.
- Torkkola, J. Email: janne.torkkola@uqconnect.edu.au, Published online 29 Dec 2021. <https://doi.org/10.107082/j.2204-1478.63.2021.2020-13>.