



# Predation by an Eastern Brownsnake, *Pseudonaja textilis* (Duméril, Bibron, & Duméril 1854), on a Mallee Black-backed Snake, *Parasuta nigriceps* (Günther 1863)

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Photographs by the senior author.

Predation can have a dramatic effect on ecosystem dynamics by influencing predator and prey characteristics, populations, and communities (Sih et al. 1985). Consequently, documented predator-prey observations should identify both the predator and prey species to the lowest taxonomic level possible to expand the natural history knowledge of both species involved. Herein we report an instance of an Eastern Brownsnake, *Pseudonaja textilis* (Duméril, Bibron, & Duméril 1854), preying on a Mallee Black-backed Snake, *Parasuta nigriceps* (Günther 1863).

At ca. 1600 h on 14 November 2017, we collected the remains of a *P. textilis* from the side of a dirt road in the Mid North region of South Australia (33°55'49"S, 139°16'53"E, datum: WGS84; elev. 193 m). The tail of the snake was complete and had a length of 133 mm. Based on the snout-vent length (SVL) to tail length (TL) ratio (4.31:1) of another female Eastern Brownsnake roadkill collected a week earlier in the same area, we estimated that the snake had had a SVL of ca. 570 mm. Dissection of the snake revealed that its stomach contained an intact female *P. nigriceps* with a SVL and TL of 307 mm and 40 mm, respectively. The digestive tract of the *P. nigriceps* in turn contained the partly digested remains of a Dark-spined Blindsnake, *Anilius bicolor* (Peters 1858) (Fig. 1).

*Pseudonaja textilis* occurs throughout most of eastern Australia, ranging from lower Cape York Peninsula in Queensland through New South Wales and Victoria to southeastern South Australia (Cogger 2014). It is a habitat generalist and can occur in a wide variety of habitats, including humid habitats, such as coastal heath, to more arid situations, such as inland grasslands and arid scrubs (Coombe 2011; Cogger 2014). Eastern Brownsnakes are predominantly diurnal, although they may also occasionally be active on warm evenings (Coombe 2011; Cogger 2014). *Pseudonaja textilis*



**Fig. 1.** The remains of a road-killed Eastern Brownsnake (*Pseudonaja textilis*) prior to dissection (top; note the tail tip of the prey item protruding from the carcass) and (bottom) the three snake species from top to bottom: *Pseudonaja textilis*, Mallee Black-backed Snake, *Parasuta nigriceps*, and Dark-spined Blindsnake, *Anilius bicolor* after dissection.

tends to prey on small mammals and reptiles, although it has been recorded to prey on lizard eggs, some frogs, and small birds (Shine 1977; Coombe 2011; Cogger 2014). Eastern Brownsnakes are active foragers (Coombe 2011) and can visually distinguish prey, such as lizards (Fig. 2), even when the prey remains still (Fleay 1943; Fenner et al. 2008). This explains why the majority of the species recorded as prey of these snakes (Table 1) are diurnal. The presence of prey species such as the rodents, which usually are nocturnal, could involve individuals active by day under some condition, but a more likely explanation is that *P. textilis* actively investigates burrows



**Fig. 2.** An Eastern Brownsnake (*Pseudonaja textilis*) found at 1135 h on 20 September 2017 preying on a juvenile (SVL 173 mm; TL 40 mm; body mass 94 g) Sleepy Lizard (*Tiliqua rugosa*) in the Mid North Region of South Australia.

**Table 1.** A summary of species that have been reported previously as prey of the Eastern Brown Snake, *Pseudonaja textilis*. An asterisk (\*) denotes that a synonym was used in the literature cited. References: <sup>1</sup>Shine (1989); <sup>2</sup>Roberts and Mirtschin (1991); <sup>3</sup>Armstrong and Reid (1992); <sup>4</sup>Valentic (1996).

Type	Family	Species	
Frogs	Hylidae	<i>Litoria caerulea</i> <sup>1</sup>	
		<i>Litoria fallax</i> <sup>1</sup>	
	Myobatrachidae	<i>Limnodynastes fletcheri</i> <sup>1</sup>	
		<i>Limnodynastes tasmaniensis</i> <sup>1</sup>	
Lizards	Agamidae	<i>Amphibolurus muricatus</i> <sup>1</sup>	
		<i>Ctenophorus nuchalis</i> <sup>1</sup>	
		<i>Pogona barbata</i> <sup>1</sup>	
	Gekkonidae	<i>Pogona vitticeps</i> <sup>1</sup>	
		<i>Christinus marmoratus</i> <sup>*1</sup>	
		<i>Gehyra variegata</i> <sup>1</sup>	
		<i>Lucasium stenodactylum</i> <sup>*1</sup>	
		Scincidae	<i>Carlia tetradactyla</i> <sup>1</sup>
			<i>Ctenotus inornatus</i> <sup>*1</sup>
			<i>Cyclodomorphus gerrardii</i> <sup>*1</sup>
			<i>Eulamprus quoyii</i> <sup>1</sup>
			<i>Hemiergis decresiensis</i> <sup>1</sup>
			<i>Hemiergis peronii</i> <sup>1</sup>
		<i>Lampropholis delicata</i> <sup>1</sup>	
		<i>Lampropholis guichenoti</i> <sup>1</sup>	
		<i>Lampropholis platynotum</i> <sup>1</sup>	
		<i>Lerista bougainvillii</i> <sup>1</sup>	
		<i>Lerista labialis</i> <sup>1</sup>	
		<i>Menetia greyii</i> <sup>1</sup>	
		<i>Morethia adelaidensis</i> <sup>1</sup>	
		<i>Morethia boulengeri</i> <sup>1</sup>	
		<i>Morethia obscura</i> <sup>1</sup>	
		<i>Tiliqua adelaidensis</i> <sup>3</sup>	
		<i>Tiliqua rugosa</i> <sup>2</sup>	
		<i>Tiliqua scincoides</i> <sup>4</sup>	
Snakes	Elapidae	<i>Denisonia devisi</i> <sup>1</sup>	
		<i>Pseudonaja textilis</i> <sup>1</sup>	
Mammals	Leporidae	<i>Oryctolagus cuniculus</i> <sup>1</sup>	
	Muridae	<i>Mus domesticus</i> <sup>1</sup>	
		<i>Rattus lutreolus</i> <sup>1</sup>	
		<i>Rattus rattus</i> <sup>1</sup>	
		<i>Rattus tunneyi</i> <sup>1</sup>	

and other shelters for possible prey, which are then located primarily by scent (Fenner et al. 2008; Coombe 2011).

*Parasuta nigriceps* (Fig. 3) occurs in semi-arid parts of southern Australia from southwestern Western Australia to western Victoria and southwestern New South Wales (Cogger 2014). Mallee Black-backed Snakes prey primarily on agamids, geckos, skinks, and their eggs, although they may opportunistically consume blindsnakes, as described herein, and small elapids (Coombe 2011). Since these snakes are nocturnal, they tend to shelter in leaf litter or under objects such as rocks and fallen branches during the day (Coombe 2011; Cogger 2014). Although *P. nigriceps* and *P. textilis* might both be active at dawn or dusk, the time of day of our observation and the undigested state of the prey item, suggest that the *P. textilis* most likely consumed the *P. nigriceps* while it was sheltering. To the best of our knowledge, this is the first reported instance of *P. textilis* predation on *P. nigriceps*.

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**Fig. 3.** The Mallee Black-backed Snake (*Parasuta nigriceps*) described herein after it had been removed from the digestive tract of the *Pseudonaja textilis*. Note the lack of signs of the onset of digestion.



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