

SHORT COMMUNICATION

# Prey dismemberment in the feeding behavior of the Australian skinks *Lampropholis delicata* and *L. guichenoti* (Squamata: Scincidae)

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Lizards primarily ingest prey whole (Brown *et al.* 2003); however, there are some exceptions where prey bodies are dismembered prior to consumption. The most common examples are carcass feeding by Komodo dragons, *Varanus komodoensis* Ouwens, 1912, (Moreno *et al.* 2008, D'Amore *et al.* 2011) and other monitor lizards (Uyeda *et al.* 2013, Fitzsimons and Thomas 2016), which enable these animals' diets to extend to larger prey species. In addition, there are also field observations of large skinks scavenging morsels from carcasses (O'Brien *et al.* 2007) and laboratory observations of the Broad-headed skink, *Plestiodon laticeps* (Schneider, 1801), dismembering invertebrates and mice (Cooper 1981). To the best of our knowledge, these reports appear to be the only published accounts of prey dismemberment by skinks.

Skinks are commonly observed lizards in much of Australia and other continents. The Delicate skink *Lampropholis delicata* (De Vis, 1988) and Garden skink *L. guichenoti* (Duméril and Bibron, 1839) occur across broad expanses of eastern and southeastern Australia (Wilson and Swan 2021). Both are well-suited to settled areas and readily encountered in suburban gardens (Howard *et al.* 2003, Shea 2010, Wilson 2012), with *L. guichenoti* preferring open-structured microhabitats with ground litter and *L. delicata* preferring more moist and shade microhabitats (Wilson and Swan 2021). Their environmental adaptability is demonstrated in *L. delicata* colonizing new regions, including Lord Howe Island, New Zealand and Hawaii (Baker 1979, Chapple *et al.* 2015, 2016). Both *L. delicata* and *L. guichenoti* are generalist feeders that prey on a wide range of invertebrates, particularly insects and spiders (Crome 1981, Lunney *et al.* 1989, Resasco *et al.* 2018); however, there is also evidence that certain prey items are preferred over others (Martin 2015).

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We report three observations of *Lampropholis delicata* and *L. guichenoti* preying on, and dismembering, bark cockroaches *Laxta granicollis* (Saussure, 1862), a Blaberidae of southeastern Australia usually found beneath logs and bark (Roth 1992). These observations occurred in suburban gardens in Sydney, New South Wales, Australia. In all instances, *L. granicollis* were encountered by skinks above ground without any ground debris being removed or disturbed.

On 29 October 2020 at approximately 13:00 h, we observed one *Lampropholis delicata* approach a *Laxta granicollis* that was partially emerged from a layer of woody mulch. The *L. delicata* bit the *L. granicollis* when it moved and dragged it onto the surface of the mulch. It proceeded to latch its mouth onto the lateral rim of the abdomen of the *L. granicollis* and perform rapid headshakes. This was repeated up to 15 times, a few times resulting in the *L. granicollis* being released and flipped on its back. The time between headshakes appeared to be associated with whether the *L. granicollis* was released during headshakes, and its response. Headshakes were performed closer together when the *L. delicata* maintained its grasp during the headshake and the *L. granicollis* was moving or the *L. granicollis* was released and started to move away, while there were generally longer periods between headshakes (5–10 s) when the *L. granicollis* was still within grasp but not moving or released and flipped on its back (thus unable to move away). The *L. delicata* then latched onto one of the limbs of the *L. granicollis* while it was flipped on its back and removed the limb with a headshake, which was swallowed. The *L. delicata* then repeated this behavior, taking a further four limbs before losing interest and retreating.

On 16 February 2021 at approximately 17:00 h, we observed two *Lampropholis delicata* drawn to a *Laxta granicollis* partially emerged from soil. Similar to the first observation, one of the *L. delicata* pulled it clear of the soil. Both *L. delicata* proceeded to perform bite-headshake


maneuvers on the lateral rim of the head and abdomen of the *L. granicollis*. Both *L. delicata* undertook these maneuvers with rapid succession over a period of approximately 2 min, pausing briefly only when a section of abdomen had been detached that was small enough to swallow. Often one *L. delicata* was latched onto the *L. granicollis* while the other *L. delicata* performed the headshake. They also detached limbs like the *L. delicata* in the first observation. After approximately 1 min, a *L. guichenoti* also joined in this behavior. Between the three skinks, we estimate eight instances where headshakes resulted in a portion of the *L. granicollis* being dismembered and consumed, mostly limbs and portions of the lateral rim of the abdomen. After approximately 2 min, all three skinks lost interest and retreated.

On 07 September 2021 at approximately 09:00 h, we observed one *Lampropholis delicata* approach a *Laxta granicollis* that had emerged from a layer of woody mulch. This *L. delicata* also performed the bite-headshake maneuvers repeatedly for approximately 2 min with few pauses lasting more than 2 s unless it had dismembered a portion of the *L. granicollis* to consume. During this period, the *L. delicata* dismembered three portions of the abdomen and two limbs. A *L. guichenoti* joined in performing the bite-headshake maneuvers, during which the two skinks were often latched onto the *L. granicollis* while the other skink performed a headshake. Within approximately 1 min, the *L. guichenoti* had dismembered and consumed the head of the *L. granicollis*. It then latched onto the rim of the thorax and carried away the *L. granicollis*, which prompted the *L. delicata* to give chase. Both skinks and the *L. granicollis* disappeared from our view.

To the best of our knowledge, we are not aware of any other published accounts of these skink species dismembering prey prior to consumption. However, based on us incidentally observing three instances of this behavior within a 12-month period, these are potentially common occurrences for these species, and

may also extend to other skink species. In two of our observations, *Laxta granicollis* were dismembered whilst grasped by more than one skink, during which skinks managed to break off portions of the abdomen and head. By comparison, the first observation involved only a lone *Lampropholis delicata*, and the food obtained by this skink was limited to the limbs of the *L. granicollis*. This suggests that skinks benefit from engaging in bite-headshake maneuvers in tandem with other individuals, in which skinks provide leverage for each other's attempt to dismember the prey item. This communal feeding behavior has been reported in other lizards (Black 2012), as well as other reptiles such as crocodylians (Pérez-Higareda *et al.* 1989, Platt *et al.* 2007). Feeding interactions between multiple individuals of *L. delicata* and *L. guichenoti* are not unusual, with both species known to hunt in the presence of conspecifics (Martin 2015, M. Mo and E. Mo, pers. obs.), which is foreseeable considering the abundance of both species at numerous locations such as our observation sites. Despite potential benefits from communal feeding, skinks were also observed pursuing each other when an individual had latched onto food (similar to observations by Martin 2015), suggesting a degree of rivalry between individuals rather than communal feeding being strictly cooperative in nature.

Both *Lampropholis delicata* and *L. guichenoti* locate prey by a combination of active foraging and sit-and-wait methods (Rawlinson 1971, Lunney *et al.* 1989). Both species were abundant throughout the sites we made observations, such that we could not determine whether the skinks happened upon *Laxta granicollis* by active foraging or the skinks had been situated nearby in sit-and-wait positions. Notably, in the first two observations, the *L. granicollis* sustained injuries but were not killed during the skinks' feeding; though, their fates afterwards were not observed. It could be possible that skinks may from time to time obtain food in this manner without killing their prey.

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