

Selective foraging behaviour in the Scincid lizard *Lampropholis guichenoti*

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Introduction

Small Australian skinks (< 10 g) are often described as generalist invertebrate predators (Greer 2001; Manicom and Schwarzkopf 2010). This view has been influenced by studies of stomach contents revealing a wide variety of prey items (Crome 1981; Taylor 1986; Greer 1989; Lunney *et al.* 1989; Brown 1991; Wapstra and Swain 1996). While these studies provide important information on the diet of small skinks, they do not indicate how prey was selected (Greer 2001; Manicom and Schwarzkopf 2010). Arthropods found in skink stomachs may have been taken opportunistically in proportion to their availability. Alternatively, skinks may have actively selected certain prey types over others that are equally or more readily available. For example, three sympatric skink species of the genus *Carlia* selectively consume prey types that are not abundant in their habitat (Manicom and Schwarzkopf 2010).

Optimal foraging theory (MacArthur and Pianka 1966) predicts that animals will concentrate feeding on the best types of food available. It might be expected therefore, that even within a broadly generalist diet, skinks will select prey with the highest nutritional value. Selectivity is even possible at the intraspecific level of prey items. Greer (2001) reported observations of seven Elegant Snake-eyed Skinks *Cryptoblepharus pulcher* preying selectively upon winged alates of small ants of the *Iridomyrmex rufoniger* group while actively avoiding worker ants.

In this note I present observations of selective foraging on alates by the Garden Skink *Lampropholis guichenoti*, a small (adult SVL 48 mm) scincid lizard occurring in eastern Australia (Wilson and Swan 2013).

Observations

Observations were made between 1125 and 1200h Eastern Standard Time in a suburban garden in Rosehill, NSW on 19 September 2012. Ants and skinks were active over an approximately 2 m x 2 m area of concrete paving and adjoining garden bed receiving full sunlight. Large numbers of worker ants and alates were observed emerging through two cracks in the concrete paving approximately 50cm apart. Initially three adult *L. guichenoti* were observed feeding on alates as they emerged from the nest. Over the course of five minutes a further eight adult *L. guichenoti* converged around the entrances to the nest

and began consuming alates. A total of 52 alates were seen to be taken by the skinks in a 35 minute period; an average of two alates per skink every 15 minutes. This probably underestimates the actual number taken as it is likely that some captures were not detected. Worker ants were largely ignored, despite outnumbering alates by a considerable margin. On six occasions, however, skinks actively avoided approaching worker ants by moving away.

Skinks appeared to be able to recognise alates from a distance of at least 30 cm as five were observed to attack and capture alates from this distance. Upon seizing an alate (Fig. 1), each skink would run approximately 50-60 cm from the entrance of the nest. On seven occasions a skink carrying an alate was pursued by 1-3 other skinks that appeared to be attempting to steal the alate, however, none of these attempts were successful. Skinks dispersed and resumed normal foraging behaviour when emergence of alates ceased at 1200h.

Subsequent checks of the site over the remainder of the day and the following two days revealed no further emergence of alates or congregation of *L. guichenoti* around nest entrances. While several skinks were observed to be active around the garden bed and edge of the paved area they showed no interest in worker ants and did not attempt to approach the nest.

Seven worker ants and one alate were collected, preserved in 70% ethanol and identified as belonging to the *Iridomyrmex rufoniger* group of the Dolichoderinae sub-family using the keys of Shattuck (1999) and Andersen (2000). Worker ants measured 3.5 mm in length with a gaster of 1 mm. The single alate collected measured 6 mm with a gaster of 4 mm.

Discussion

These observations of an aggregation of *L. guichenoti* selectively preying on alates of *I. rufoniger* parallel those of Greer (2001) for *C. pulcher*. *Iridomyrmex rufoniger* alates would thus seem to be more attractive than worker ants of the same species. Worker ants appeared to be more readily available than alates; however, the potential return from consumption of alates apparently warranted the energy expended in preying selectively upon them and even attempting to steal captured alates from other skinks.

Alates may be an attractive food due to higher fat content and lesser defences compared to worker ants (Greer 2001). The larger body size and gaster dimensions of alates may reflect greater energy content than that provided

by smaller worker ants. Worker ants of *Iridomyrmex* spp. are also noted for their strong formic acid 'crushed ant' chemical defence (Andersen 1991).



Figure 1. Garden Skink *Lampropholis guichenoti* with captured *Iridomyrmex rufoniger* alate.

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