

fire ants of which I am aware occurred when individuals were under attack, or possibly opportunistically (e.g., Boronow and Langkilde 2010. *J. Exp. Zool.* 331A:17–23; Robbins and Langkilde 2012. *J. Evol. Biol.* 25:1937–1946). Moreover, Robbins and Langkilde (*op. cit.*) indicate uncertainty regarding whether fence lizards consume fire ants during regular foraging activity.

I observed a juvenile Eastern Fence Lizard (SVL = 22 mm) on top of an active fire ant mound on 10 October 2012 between 1730 h and 1759 h at the Joseph Jones Ecological Research Center in Newton, Georgia, USA. I observed and recorded the lizard actively moving on the mound to forage for 30 minutes and watched it consume three fire ants. Prior to this observation, on 12 September and 13 September 2012 at 1823 h and 1938 h, respectively, I observed an additional juvenile lizard on top of an active fire ant mound and, after monitoring the individual for 10 minutes, I observed the lizard consume one fire ant at 1833 h. A third juvenile lizard (SVL = 39 mm) was seen basking on an active fire ant mound by S. Greenspan on 8 October 2012 at 1118 h and I observed two more fence lizards basking on active fire ant mounds on 8 November 2012 at 1110 and 1445 h, but we did not stop to monitor their behavior. My observations indicate that Eastern Fence Lizards consume fire ants during regular foraging, rather than just opportunistically, and will use fire ant mounds as foraging sites. If fire ant consumption can lead to juvenile mortality, as found by Langkilde and Friedenfelds (*op. cit.*), this behavior could have a considerable influence on fence lizard population dynamics.

**ANDREA K. LONG**, University of Florida, Department of Wildlife Ecology and Conservation, 110 Newins-Ziegler Hall, PO Box 110430, Gainesville, Florida 32611, USA; e-mail: aklong@ufl.edu.

**SCELOPORUS UNIFORMIS (Yellow-backed Spiny Lizard). DIET.** *Sceloporus uniformis*, recently elevated to species from within the *S. magister* complex (Crother [ed.] 2012. *SSAR Herpetol. Circ.* 39:1–92; Leaché and Mulcahy 2007. *Mol. Ecol.* 16:5216–5233), is a robust spiny lizard of the Mojave and Great Basin deserts. As with most *Sceloporus*, the species appears to be a generalist insectivore, feeding on ants, beetles, caterpillars, and other locally abundant arthropods as well as the occasional lizard (Knowlton and Nye 1946. *Utah J. Econ. Entomol.* 39:546; Parker and Pianka 1973. *Herpetologica* 29:143–152; Vitt and Ohmart 1974. *Herpetologica* 30:410–417). Here we document a novel insect prey of *S. uniformis*, ladybird beetles (Coleoptera: Coccinellidae). This observation is noteworthy because ladybird beetles are chemically defended (King and Meinwald 1996. *Chem. Rev.* 96:1105–1122), and despite being conspicuous and often abundant, they are noticeably absent from the diet of nearly all North American lizards.

On 5 May 2011, along the eastern point of Anaho Island National Wildlife Refuge in Pyramid Lake, Washoe Co., Nevada, USA (39.94937°N, 119.49952°W, NAD83; 980 m elev.), we noosed several *S. uniformis*. While handling these lizards, two adult males (SCUN AI.005, SVL 85 mm; SCUN AI.008, SVL 95 mm) regurgitated their stomach contents, which were largely Seven-spotted Ladybird Beetles (*Coccinella septempunctata*). One lizard (SCUN AI.005) regurgitated ~17 ladybird beetles, the other (SCUN AI.008) ~12 ladybirds. The lizards were measured, marked and released, and the stomach contents retained for verification.

The absence of coccinellids in the diet of most lizards is striking, given the ubiquity, abundance, and visibility of these insects. Coccinellids possess formidable chemical defenses that may deter most arthropod and vertebrate predators (Happ and Eisner 1961. *Science* 134:329–331; Marples 1993.

Chemoecology 4:33–38), including pyrazines that give an unpleasant odor (Moore et al. 1990. *Chemoecology* 1:43–51) and various toxic or distasteful alkaloids that ladybirds can exude from their haemolymph when threatened (King and Meinwald 1996, *op. cit.*). These chemicals are particularly effective against some birds, even inhibiting growth (Marples 1993, *op. cit.*). However, other vertebrates appear less affected; many amphibians seem tolerant of coccinellid toxins, and some bufonids and ranids consume significant quantities of ladybirds (Sloggett 2012. *Insects* 3:653–667). Among North American lizards, coccinellids have only been found as apparently accidental food items in the anguid *Elgaria multicarinata* (Cunningham 1956. *Herpetologica* 12:225–230) and xantusiid *Xantusia vigilis* (Brattstrom 1952. *Copeia* 1952:168–172), as well as the phrynosomatids *Uta stansburiana* (Knowlton and Thomas 1936. *Copeia* 1936:64–66) and *S. occidentalis* (Johnson 1965. *Herpetologica* 21:114–117). Only two phrynosomatids, *S. undulatus* and *S. graciosus*, appear to include ladybirds as a meaningful component of their diets, taking coccinellids with the same frequency as other similar-sized beetles (Johnson 1966. *Am. Midl. Nat.* 76:504–509; Knowlton 1948. *Herpetologica* 4:151; Knowlton and Thomas 1936, *op. cit.*; Knowlton et al. 1946. *Utah J. Econ. Entomol.* 39:382–383; Toliver and Jennings 1975. *Southwest. Nat.* 20:1–11). We suspect that our case of ladybird predation is purely incidental because earlier diet analyses of lizards in the *S. magister* complex have failed to turn up coccinellids as prey (e.g., Knowlton and Nye 1946, *op. cit.*; Parker and Pianka 1973, *op. cit.*; Vitt and Ohmart 1974, *op. cit.*), and in our examination of several *S. uniformis* stomachs from Anaho Island we have never observed coccinellids. Nevertheless, it remains unclear whether the toxins in ladybirds are effective deterrents to lizard predation in general, and whether some lizard groups (e.g., *Sceloporus*) have evolved tolerance or other means of resistance to these defenses.

We thank D. Withers of the USFWS for permits and access to Anaho Island, and M. L. Forister for verifying the beetles.

**CHRIS R. FELDMAN**, Department of Biology, University of Nevada, Reno, Nevada 89557, USA (e-mail: ophis@unr.edu); **NATHAN C. NIETO**, Department of Biological Sciences, Northern Arizona University, Flagstaff, Arizona 86011, USA (e-mail: nathan.nieto@nau.edu); **JAMES B. BETTASO**, East Lansing Ecological Services Field Office, United States Fish and Wildlife Service, East Lansing, Michigan 48823, USA (e-mail: Jamie\_bettaso@fws.gov); **C. M. GIENGER**, Department of Biology and Center of Excellence for Field Biology, Austin Peay State University, Clarksville, Tennessee 37044, USA (e-mail: giengerc@apsu.edu).

**TROPIDURUS HYGOMI (Reinhardt's Lava Lizard). COURTSHIP BEHAVIOR.** *Tropidurus hygomi* is a heliothermic, generalist lizard, endemic to northeastern Brazil in restinga ecosystems of the north coast of Bahia from Salvador to the state of Sergipe (Rodrigues 1987. *Arq. Zool., S. Paulo* 31[3]:105–230). There are no records concerning the courtship behavior of the species.

On 13 March of 2013, around 0900 h, we recorded courtship behavior, followed by an attempted mating, between two *T. hygomi* within restinga of Reserva Imbassaí (12.481616°S, 37.957193°W; datum WGS 84) using a Samsung WB100 digital camera. We kept a distance of 3 m from the lizards during filming. Air and substrate temperature were 36.6°C and 28°C, respectively. The adult female was foraging among leaf litter. When the female noticed the presence of the male, she elevated her tail (Fig. 1). Such behavior in some lizard species is performed during courtship or as a defensive action towards predators (Dial 1986. *Amer. Nat.* 127:103–111). The female then waved the tail