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Phrynosoma cornutum (Texas horned lizard). Predation.

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PHOLIDOSCELIS ATRATA (Redonda Ground Lizard). DIET. *Pholidoscelis atrata* (formerly *Ameiva atrata*) is endemic to the small, uninhabited island of Redonda, which is owned by Antigua and Barbuda (Bell and Daltry 2012. Feasibility study for the eradication of black rats *Rattus rattus* from Redonda. Offshore Islands Conservation Programme). As such, relatively little is known of its natural history and diet. Here, we report an unusual predation event: *P. atrata* eating a hermit crab (*Coenobita clypeatus*).

At 0727 h on 26 February 2017, a male *P. atrata* was observed tearing apart and consuming a large hermit crab (Fig. 1). The event took place in a boulder field near our encampment (16.93576°N, 62.34570°E, WGS 84; 135 m elev.) where many hermit crabs were active following rain showers during the night. When we noticed the feeding event, the crab had already been removed from its shell. Over several minutes, we observed the *P. atrata* focus its attention on the abdomen of the crab, eventually consuming the majority of that portion of the animal. The *P. atrata* avoided eating the claws or legs of the crab and left both after consuming the body and tail.

Ground lizards are well-known carnivores and scavengers with wide-ranging opportunistic diets that can include insects, spiders, land snails, eggs, and carrion (Lewis 1989. *J. Herpetol.* 23:164–170; Vitt and Zani 1996. *J. Herpetol.* 30:110–117). On Redonda they have been observed feeding on bird and fish carrion, beetles, and moths (Bell and Daltry 2012, *op. cit.*). To our knowledge, however, this is the first documentation of *Pholidoscelis (Ameiva)* consumption of hermit crabs, and certainly represents a new observation for the species living on the island of Redonda. This observation highlights the opportunistic nature of the diet of lizards on small islands and the propensity of these lizards to include hard or difficult to ingest or even dangerous prey in their diet (Castilla and Herrel 2009. *J. Arid Environ.* 73:378–380).



FIG. 1. *Pholidoscelis atrata* biting into a hermit crab (*Coenobita clypeatus*).

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PHRYNOSOMA CORNUTUM (Texas Horned Lizard). PREDATION. There are many known predators of *Phrynosoma cornutum* including snake species such as *Crotalus atrox* (Western Diamondback Rattlesnake), *Crotalus cerastes* (Sidewinder), *Masticophis* spp. (whipsnakes), and *Heterodon nasicus* (Plains Hognosed Snake; Sherbrooke 2003. Introduction to Horned Lizards of North America. University of California Press, Berkeley, California. 177 pp.; Sherbrooke et al. 2004. *Copeia* 2004:652–658; Adams et al. 2015. *Herpetol. Rev.* 46:645). Herein we report two new predators of *P. cornutum*.



FIG. 1. An x-ray of an *Agkistrodon contortrix* after ingesting a *Phrynosoma cornutum* with radio-transmitter and passive integrated transponder (PIT) tag.



FIG. 2. Blood squirting behavior of a juvenile *Phrynosoma cornutum* following a *Lampropeltis holbrooki* attack and ingestion.

Spanning the last decade, we have used radio telemetry to monitor a population of *P. cornutum* on Tinker Air Force Base near Oklahoma City, Oklahoma, USA (35.41578°N, 97.41097°W; WGS 84). On 30 July 2008, an adult female telemetered lizard (SVL = 70 mm; 22.6 g) was tracked to an *Agkistrodon contortrix* (Copperhead). The snake was captured, x-rayed, and held for four days when it passed the transmitter (Fig. 1).

While tracking another adult female (SVL = 91 mm; 29 g) at 1500 h on 27 August 2016, we found that an adult *Lampropeltis holbrooki* (Speckled Kingsnake) had consumed the lizard, including the transmitter. We captured and held the snake for seven days to retrieve the ingested transmitter. While the first snake was being held captive, we discovered, at 1700 h on 3 September 2016, a juvenile telemetered lizard (SVL = 50.9 mm; 10.83 g) had been preyed upon by another adult *L. holbrooki*. Upon approach, the snake regurgitated the deceased lizard and retreated. The lizard's eyes and head were covered in blood, suggesting it exhibited blood squirting during the attack (Fig. 2). Blood squirting is a defense mechanism thought to be primarily elicited by canids and other mammalian predators (Middendorf and Sherbrooke 1992. *Copeia* 1992:519–527).

To our knowledge, *A. contortrix* and *L. holbrooki* and have never before been confirmed as *P. cornutum* predators.

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PHYLLOPEZUS POLLICARIS (Brazilian Gecko). TAIL BIFURCATION. Morphological malformations such as structural body anomalies, polydactyly, brachydactyly, teratogenic defects, and unusual appendages or tissue growth are well recorded in amphibians (Meteyer et al. 2000. *Teratology* 62:151–171; Johnson et al. 2003. *Conserv. Biol.* 17:1724–1737; Ferreira et al. 2014. *Herpetol. Rev.* 45:307; Noronha and Rodrigues 2014. *Herpetol. Rev.* 45:306), turtles (Hildebrand. 1938. *J. Hered.* 29:243–254; Ewert 1979. *In* M. Harless and H. Morlock [eds.], *Turtles: Perspectives and Research*, pp. 333–413. John Wiley and Sons, New York; Pereira et al. 2014. *Herpetol. Rev.* 45:319–320), and lizards (Carretero et al. 1995. *Bol. Assoc. Herpetol. Esp.* 1995:11–13; Megía 2012. *Bol. Asoc. Herpetol. Esp.* 23:54–56; Bauer et al. 2009. *Herpetol. Notes* 2:243–246; Caldwell and Hong 2012. *Herpetol. Rev.* 43:485; Carbajal-Márquez et al. 2012. *Herpetol. Rev.* 43:485–486; Gogliath et al. 2012. *Herpetol. Rev.* 43:129; Gomides et al. 2014. *Herpetol. Rev.* 45:331–332; Ineich and Miralles 2014. *Herpetol. Rev.* 45:322–323). Herein we present the first record of tail bifurcation in *Phylllopezus pollicaris*, a nocturnal gecko widely distributed in central South America (Vanzolini et al. 1980. *Répteis das Caatingas*. Acad. Bras. de Cienc., Rio de Janeiro; Rodrigues 1986. *Pap. Avul. Zool.* 36:237–250).

On 17 March 2011, a free-living adult male *P. pollicaris* was observed on the roof of a field house in Canudos Biological Station, Bahia, northeast Brazil (9.953139°S, 39.001969°W, WGS 84;

375 m elev.). The gecko had a clearly regenerated tail that ended in two tips (SVL = 67 mm, tail length = 53.38 mm). There were at least four other adult Brazilian Geckos in the house, but all had normal tails.

Tropical geckos present a high incidence of tail autotomy (Arnold 1984. *J. Nat. Hist.* 18:127–169; Van Sluys et al. 2002. *Stud. Neotrop. Fauna Environ.* 37:227–231; Bateman and Fleming 2009. *J. Zool.* 277:1–14; Recoder et al. 2012. *Herpetol. Notes* 5:49–58), which may reflect an important defensive strategy for this group (Vitt et al. 1977. *Ecology* 58:326–337). It is highly probable that the case presented here was due to an isolated malformation during caudal re-growth.

The *P. pollicaris* specimen was collected and deposited at the Coleção Herpetológica do Museu de Zoologia da Universidade Federal da Bahia (MZUFBA-LAG2812). Ryan Watson provided helpful suggestions and English review.

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PLESTIODON SKILTONIANUS (Western Skink). MALE COMBAT. *Plestiodon skiltonianus* is native to western North America. A series of reproductive behaviors have been described for this species, including courtship, nesting, and guarding of eggs by females (Tanner 1943. *Great Basin Nat.* 4:81–88; Tanner 1957. *Great Basin Nat.* 17:59–94). Here, we report an additional behavior—an apparent fight between two male *P. skiltonianus*.

On 4 May 2017, we observed two male *P. skiltonianus* fighting on a hill adjacent to the Columbia River in southwestern Washington State (Skamania County: 45.7206°N, 121.6403°W, WGS 84; 32 m elev.). The habitat at this site is a southeast-facing slope with exposed rock outcrops. Parent geology is basalt; vegetation consists of small, scrubby oak trees (*Quercus garryana*), stands of Poison-oak (*Toxicodendron diversilobum*), and low herbaceous vegetation, including grasses, Clarkia (*Clarkia purpurea*), Grasswidow (*Sisyrinchium douglasii*), and scattered clumps of parsley (*Lomatium* spp.). This site is used by *P. skiltonianus* year-round (CJR, unpubl. data). The setting for our observation was a large (35 cm diameter) rock, sitting on a small grassy ledge, approximately 40 cm wide. The downhill side of this ledge had a 35 cm drop to a larger grassy ledge, on which was scattered other rocks and a scrubby oak (*Quercus garryana*) bush.

At 1041 h, we saw a pair of *P. skiltonianus* (both = ca. 55 mm SVL) dash out from beneath the large rock. The two skinks were adult males, as determined by the bright red breeding coloration of their heads and throats (Nussbaum et al. 1983. *Amphibians and Reptiles of the Pacific Northwest*. University of Idaho Press, Moscow, Idaho. 332 pp.). When they emerged, one skink had the other's head in its jaws; the latter male was twisting and writhing in an attempt to free itself. Despite repeated attempts by this (latter) male to get free, the first male pushed and dragged it across the 40-cm-wide grassy ledge. After a brief pause, the pair darted toward the edge, at which point the first male released its hold and dropped the other off the ledge. The dropped male, which appeared to be the loser of the conflict, scurried off through the grass and was lost to view. The apparent victor made