

FIG. 1. In *Karusasaurus jordani* both sexes, A) female (SVL = 120 mm; tail = 144 mm) and B) male (SVL = 115 mm; tail = 125 mm), have wax-filled femoral pores. There are typically seven femoral pores per thigh. Males have generation glands.



FIG. 2. Female *Karusasaurus jordani* (National Museum of Namibia 3480) with four early-stage developing embryos.

We examined a total of 26 female *K. jordani* for reproductive status from the existing collection at the National Museum of Namibia, Windhoek, Namibia (NMN); three specimens showed some obvious signs of reproductive development. One specimen from just north of Rehoboth contained two ovarian follicles (NMN 9327, 19 July 1998). One specimen from Regenstein on the outskirts of Windhoek contained four early-stage developing embryos (NMN 3480, 28 Oct 1983; Fig. 2). One specimen from Windhoek contained one late-stage embryo (NMN 1787, 29 January 1970). The timing of the reproductive status of females and timing of neonates captured in the field are consistent with reproduction within the *Ouroborus-Karusasaurus-Namazonurus-Hemicordylus-Cordylus* clade (Mouton et al. 2012. *J. Zool.* 288:191–198). Timing of *K. jordani* male spermatogenesis is assumed to be in spring (Mouton et al., *op. cit.*).

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OPHIODES STRIATUS (Brazilian Glass Lizard). PREDATION. *Ophiodes striatus* is an anguid lizard characterized by its elongated snake-like body shape, absent anterior limbs, reduced posterior limbs (usually a femur, tibia, and fibula), and a tail that is easily autotomized as a defense mechanism (Carreira et al. 2005. *Reptiles de Uruguay. Di. R. A. C., Facultad de Ciencias, Universidad de la República. Montevideo.* 639 pp.). In this note, we report a new predator of this species, the Pampean Racer (*Philodryas patagoniensis*).

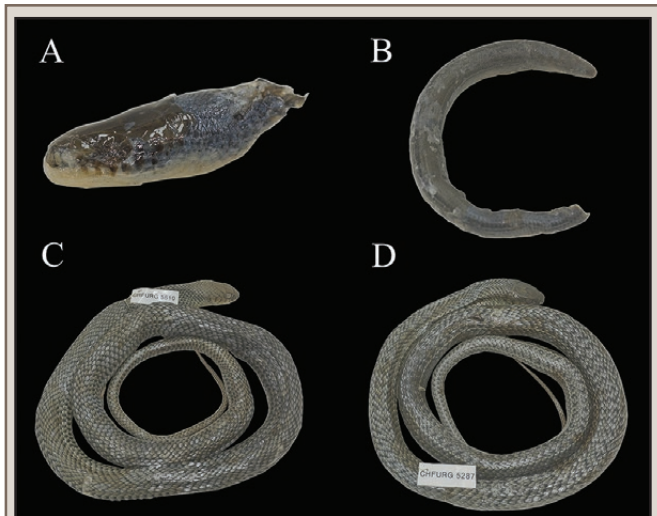


FIG. 1. *Ophiodes striatus* (top) and their respective predators, *Philodryas patagoniensis* (bottom).

While examining stomach contents of preserved individuals of *P. patagoniensis* at the Coleção Herpetológica Universidade Federal de Rio Grande (CHFURG), we encountered two partially digested individuals of *O. striatus* in the digestive tract of two specimens. The first snake, CHFURG 5510, was an adult female (SVL = 82 cm; TL = 29.6 cm; head length = 3.8 cm; weight = 305 g), collected in Rio Grande municipality, Rio Grande do Sul, Brazil; in its gut we encountered a partially digested head of *O. striatus* (head length = 2.4 cm; weight = 64 g). The second specimen, CHFURG 5287, is also an adult female (SVL = 72 cm; TL = 25 cm; head length = 2.8 cm; weight = 158.4 g), collected in the same locality; in its gut we encountered the first third of an adult *O. striatus* (total size = 19.8 cm; head length = 1.17 cm; weight = 18.1 g). To our knowledge this is the first report of *P. patagoniensis* as a predator of *O. striatus*.

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PHYMATURUS WILLIAMSII. PREDATOR-PREY INTERACTION. Predation is a selective force that models prey populations (Sih et al. 1985. *Annu. Rev. Ecol. Syst.* 16:269–311). However, predator-prey interactions are rarely observed in the field for a given species. The Andean lizard *Phymaturus williamsii* (Lobo et al. 2013. *Zootaxa* 3683:117–132), was recently categorized as vulnerable (Abdala et al. 2012. *Cuad. Herpetol.* 26:215–248) and is endemic to Quebrada Vallecito (31.1791°S, 69.7092°W, WGS 84; 3000 m elev.), in the high Andes, 40 km NW of Calingasta, San Juan Province, Argentina. No previous studies have identified predators of *P. williamsii*. Herein we document attempted predation by birds on *P. williamsii*, as well as the lizards' responses to the presence of predators.

In December 2010, we observed two Variable Hawks (*Geranoaetus polyosoma*) flying overhead. At the moment that the shadow of birds passed over the body of four *P. williamsi*, the lizards rapidly ran for cover. Two of these individuals were males, while the two remaining were a female and a juvenile. The males hid in rock crevices on slopes, while the female and juvenile hid under a rock (0.7 m × 0.8 m) in the meadow. We are unsure if the hawks were hunting lizards, or would take them.

In November and December 2014, we observed a Black-billed Shrike-Tyrant (*Agriornis montanus*) and a Chiguanco Thrush (*Turdus chiguanco*), respectively, flying fast and directly toward basking adult *P. williamsi* (sex unknown). In both cases, the lizards managed to take refuge in rock crevices. Also in both cases, the birds remained in the area where the lizards were hidden for approximately one minute. The birds appeared to be attempting to catch the lizards.

On January 2015, we observed a White-winged Cinclodes (*Cinclodes atacamensis*) flying rapidly toward a male *P. williamsi*. Before the bird reached it, the lizard fled and hid under a rock (1.8 m × 1.5 m) at the interface between the plain and slope. The bird continued to fly to a nearby stream (located 13 m away). The bird appeared to be attempting to catch the lizard.

On November 2014 and January 2015, we observed a Straight-billed Earthcreeper (*Ochetorhynchus ruficaudus*) and on September 2016 a Scale-throated Earthcreeper (*Upucerthia dumetaria*) moving with jumps and short flights on a mountain slope. On both occasions, when the birds approached, the lizards quickly hid among crevices in the slopes. We are unsure if the birds were hunting lizards, or would take them as prey.

Our observations reveal that *P. williamsi* perceive certain approaching birds (or their shadows) as a threat. They also reveal an ideal natural system for studying predator-prey interactions. Outcomes could facilitate future decisions about the management, threats, and conservation of *P. williamsi*.

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PTYODACTYLUS SPP. (Fan-toed Geckos). FIELD BODY TEMPERATURES. Non-tropical reptiles select in thermal gradients a specific preferred body temperature (PBT). The body temperature they attain in the field (FBT) may differ from this. Little is known about whether PBT or FBT is more closely approximated by the optima for assorted physiological functions and is thus more important to heed when planning experimentation. For the three parapatric *Ptyodactylus* species of Israel, PBTs had been reported as follows: *P. puiseuxi* (northern Israel, largely diurnal), mean = 33.5°C, mode = 35°C; *P. guttatus* (central Israel, diel activity varying between seasons), mean = 30.9°C, bimodal, 30 and 34°C; *P. hasselquistii* (southernmost Israel, nocturnal), mean = 28.7°C, mode = 28°C (Arad et al. 1989. J. Herpetol. 23:103–108).

Here we report FBTs obtained opportunistically in and near Israel during 1970–1996 as follows: *P. puiseuxi* (N = 14), mean = 31.1°C, mode = 32°C (Fig. 1); *P. guttatus* (N = 122), mean = 30.9°C, mode = 34°C; *P. hasselquistii* (N = 12), mean = 30.9°C, mode = 33°C. Thus, for *P. puiseuxi* (diurnal) FBT seems to fall short of PBT. For *P. guttatus* (with ample N) the average of FBT equals that of PBT; the mode of FBT equals the higher mode of the bimodal PBT. However, in *P. hasselquistii* (nocturnal) FBT seems to exceed PBT.

For comparison with accompanying substrate temperatures (ST) smaller samples were available. Only in *P. puiseuxi* (diurnal, N = 10) did FBT (mean = 30.6°C, mode = 33°C) exceed ST considerably (mean = 27.3°C, mode 28°C). In *P. guttatus* (N = 39) FBT exceeded ST by 1.2°C, and in *P. hasselquistii* (N = 5) FBT = ST.

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SQUAMATA — SNAKES

AGKISTRODON PISCIVORUS (Cottonmouth). DIET. Extreme southern Illinois demarks the contemporary northern range limits for both *Agkistrodon piscivorus* and Cypress-Tupelo Swamps in the United States. On 12 October 2017, we collected a juvenile male *A. piscivorus* (INHS 30206; Total Length = 288 mm, SVL = 243 mm, 23.11 g without prey) at the base of a Cypress tree near the periphery of a nearly dry Cypress-Tupelo Swamp in Johnson County, Illinois (37.39256°N, 88.98439°W; WGS 84). Upon capture, we noticed a small bulge in the midsection of the snake indicating it had recently consumed a prey item. When preparing to preserve the snake for accessioning into the Illinois Natural History Survey (INHS) collection, we found that it had regurgitated a partially digested *Ambystoma opacum* (Marbled Salamander; INHS 30199; total length = 114 mm, SVL = 74.2 mm, 6.17 g) (Fig. 1). Size and sex of both specimens were taken post-mortem.

Ambystoma opacum have been recorded from the diet of *A. piscivorus* (Palmer and Braswell 1996. Reptiles of North Carolina. University of North Carolina Press, Chapel Hill. 412 pp.), however, it was not reported whether the *A. opacum* was an adult or juvenile. To our knowledge this is the first definitive report of juvenile *A. piscivorus* preying upon an adult *A. opacum*. While not toxic, adult *A. opacum* do produce noxious secretions from granular glands found on the dorsum of the tail that repel attacks from mammalian predators (DiGiovanni and Brodie, Jr. 1981. Herpetologica 37:234–237). Because the *A. opacum* was partially digested, we believe the stress of capture induced regurgitation rather than the noxiousness of the prey item.

In southern Illinois, adult *Ambystoma opacum* migrate to dry swamps and wetlands in mid- to late September to mate and terrestrially nest before waterbodies fill with winter rains. During this time, *A. piscivorus* are typically leaving waterbodies to overwinter in the uplands. Thus, temporal and spatial congruence of habitat between *A. piscivorus* and adult *A. opacum*

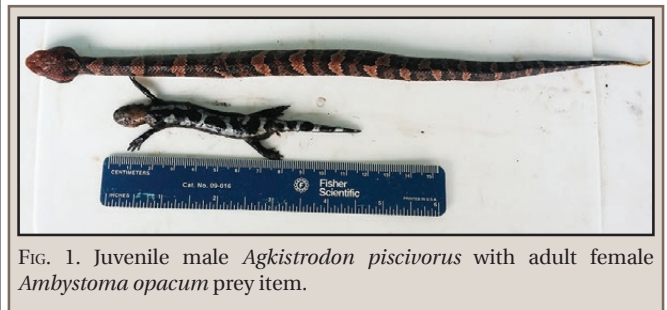


FIG. 1. Juvenile male *Agkistrodon piscivorus* with adult female *Ambystoma opacum* prey item.