

Predation on *Columbina squammata* (Aves: Columbidae) by the Green Vine Snake *Oxybelis fulgidus* (Serpentes: Colubridae) at the Lençóis Maranhenses National Park, Maranhão, Brazil

Jivanildo Pinheiro Miranda¹, João Carlos Lopes Costa², Fabiano Micheletto Scarpa³, Carlos Frederico D. Rocha⁴

Oxybelis fulgidus (Daudin, 1803) is an arboreal snake widely distributed in the Americas, occurring from Mexico to tropical South America (Peters and Orejas-Miranda, 1970). This species has been described as a sit-and-wait predator that feeds mainly on iguanid lizards and song birds (Martins & Oliveira, 1998; Scartozzoni et al., 2009). Currently, *O. fulgidus* is known to prey on the following bird species: *Amazilia tzacali* (Trochilidae; Van Dort, 2011), *Anurolimnas viridis* (Rallidae; Bringsoe, 2002), *Carduelis notata* (Fringillidae; Scartozzoni et al., 2009; Fraga et al., 2012), *Columbina passerina* (Columbidae; Fraga et al., 2012), *Dendrocincla homochroa* (Dendrocolaptidae; Scartozzoni et al., 2009; Fraga et al., 2012), *Elaenia* sp. (Tyrannidae; Scartozzoni et al., 2009; Fraga et al., 2012), *Monasa nigrifrons* (Bucconidae; Scartozzoni et al., 2009; Fraga et al., 2012), *Pipra* sp. (Pipridae; Fraga et al., 2012), *Sturnella militaris* (Icteridae; Capurucho & Costa, 2012), *Thraupis episcopus* (Thraupidae; Scartozzoni et al., 2009; Fraga et al., 2012), *Turdus grayi* (Turdidae; Figueroa & Valerio, 2011), and *Volatinia jacarina* (Thraupidae; Scartozzoni et al., 2009; Fraga et al., 2012).

Herein, we provide a new instance of predation on a bird by *O. fulgidus* in an area of *restinga* vegetation

at the Lençóis Maranhenses National Park, Maranhão, northeastern Brazil (geographic coordinates: -2.5510 and -43.1913, WGS1984). The present record was obtained on December 9th, 2005, at 05:22 pm, when we observed an adult *O. fulgidus* preying on a Scaled Dove, *Columbina squammata* (Figure 1A-D) on the ground. The bird was ingested headfirst. The snake remained on the ground for 34 minutes until it fully ingested its prey. Further, the snake headed to the nearest tree, about 50 cm away. The snake climbed with difficulty: it fell down twice, due to the heavy prey, but it eventually reached the canopy (about 2 m high).

There was no evidence suggesting that *O. fulgidus* forages on the ground (Scartozzoni et al., 2009). However, as this snake feeds on ground-dwelling species, such as the lizards *Tropidurus oreadicus* and *Manciola guaporicola* it is possible that it could capture prey while hanging beneath tree branches (Scartozzoni et al., 2009). The long time on the soil required for full ingestion and the difficulties in climbing trees subsequently suggest that *O. fulgidus* may be subjected to an increased predation risk (Godley, 1980) and changes in locomotor performance (Garland Jr. & Arnold, 1983). The present note summarizes the knowledge available on predator-prey relationships between *Oxybelis fulgidus* and bird species it preys on. Such pieces of information can be useful for future studies focusing on food web.

¹Universidade Federal do Maranhão, Centro de Ciências Agrárias e Ambientais, MA-230, Km 4, s/n, CEP 65500-000, Chapadinha, MA, Brazil.

²Programa de Pós-graduação em Zoologia, Laboratório de Herpetologia, Museu Paraense Emílio Goeldi, Avenida Magalhães Barata, 376, Terra Firme, CEP 66040-170, Belém, PA, Brazil.

³Instituto Nacional de Pesquisas Espaciais, Av. dos Astronautas, 1758 – Caixa Postal 515. CEP 12245-970 – São José dos Campos, SP, Brazil

⁴Universidade do Estado do Rio de Janeiro, Departamento de Ecologia, Rua São Francisco Xavier, 524, CEP 20550-011, Rio de Janeiro, RJ, Brazil.

¹Correspondent author: jivanildo@gmail.com

Acknowledgments. We thank Antonio Pereira, Maria Grossa, Arnaldo Oliveira Silva, Edmilson Godé, Adriano Kid Azambuja, and Thiare Fortes for field assistance. Kristen Hammer for reviewing the English language. JPM thanks CNPq for PhD Fellowship, and the Fundação “O Boticário” de Proteção à Natureza (Process 0612_20041) and FAPEMA (Process APP-01131/10 and INFRA-00563/10) for research grants. CFDR received grants from CNPq (Processes 304791/2010-5 and 472287/2012-5) and from Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro – FAPERJ (Process E-26.102.765/2012) through Programa Cientistas do Nosso Estado. Davor Vrcibradic, Diogo Provete and Danusy Lopes provided valuable suggestions on the manuscript.

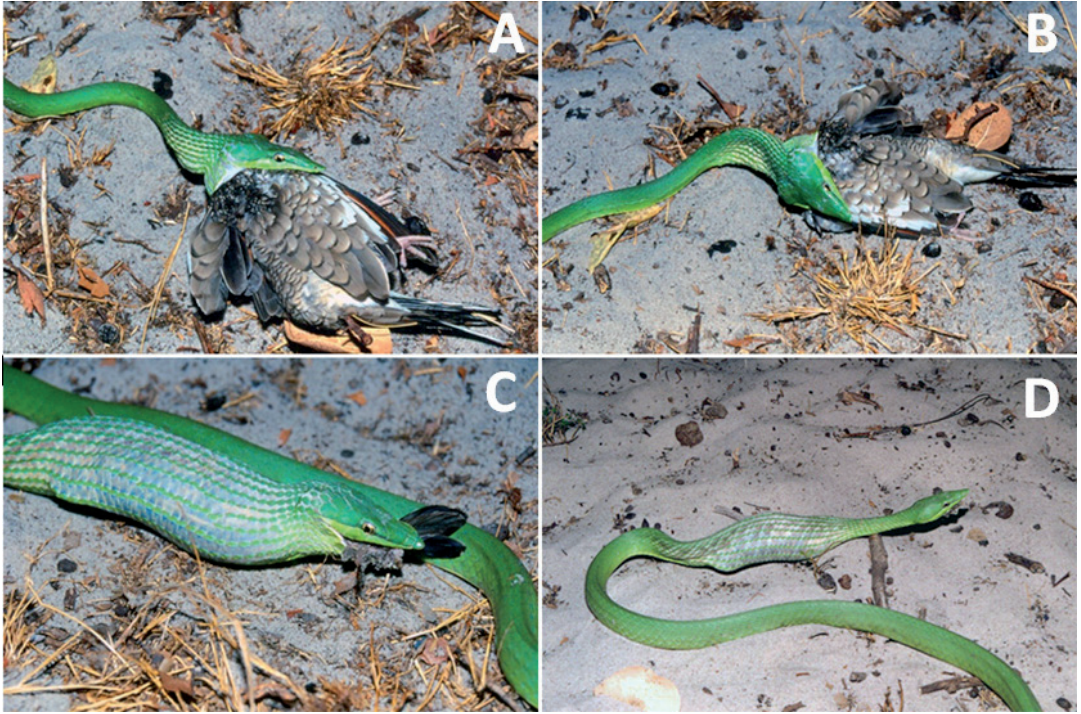


Figure 1. *Oxybelis fulgidus* from Lençóis Maranhenses, Maranhão, Brazil ingesting an individual of *Columbina squammata*. A. Headfirst ingesting of prey; B. In order to ingest a large prey the snake turned its head laterally. Such movement was repeated several times; C. Notice that the skin scales can stretch far apart to accommodate the prey; D. The prey was swallowed completely and the snake is heading to the nearest tree.

References

- Bringsoe, H. (2002): Herpetology in French Guiana 5. Green vine snake, *Oxybelis fulgidus*, feeding on water rail. Nordisk Herpetologisk Forening **45**: 95-96.
- Capurro, J. M. G., Costa, H. C. (2012): *Oxybelis fulgidus* Diet. Herpetological Review **43**: 495-495.
- Figueroa, A., Valerio, E.R. (2011): *Oxybelis fulgidus* (Green vine snake). Diet. Herpetological Bulletin **118**: 41-42.
- Fraga, R., Carvalho, V.T., Vogt, R. C. (2012): *Oxybelis fulgidus* Diet. Herpetological Review. **43**: 495-496.
- Garland Jr., T., Arnold, S. J. (1983): Effects of a full stomach on locomotory performance of juvenile Garter Snakes (*Thamnophis elegans*). Copeia **1983**: 1092-1096.
- Godley, J. S. (1980): Foraging ecology of the striped swamp snake, *Regina alleni*, in southern Florida. Ecological Monographs **50**: 411-436.
- Martins, M., Oliveira, M.E. (1998): Natural history of snakes in forests of the Manaus region, Central Amazonia, Brazil. Herpetological Natural History **7**: 78-150.
- Peters, J. A., Orejas-Miranda, B. (1970): Catalogue of the Neotropical Squamata. Part I. Snakes. Bulletin of the United States National Museum. **297**: 1-347.
- Scartozzoni, R.R., Salomão, M.G., Almeida-Santos, S.M. (2009): Natural history of the vine snake *Oxybelis fulgidus* (Serpentes, Colubridae) from Brazil. South American Journal of Herpetology **4**: 81-89.
- Van Dort, J. (2011): *Oxybelis fulgidus*. Diet. Herpetological Bulletin **117**: 37-38.