

Death of a juvenile snake *Oxyrhopus petolarius* (Linnaeus, 1758) after eating an adult house gecko *Hemidactylus mabouia* (Moreau de Jonnès, 1818)

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Snakes are relevant predators in many terrestrial, aquatic and marine communities (Rodríguez-Robles, 2002), and are known for their abilities of eating entire large prey items, where a positive correlation between snake and prey sizes is observed (Ditmars, 1912; Gans, 1961; Mushinsky, 1987). Morphology, disposition and mobility of skull and glottis, as well as elastic associated tissues are features that allow many snakes to show these feeding habits (Arnold, 1983; Gans, 1961). Thus, snake morphology limits preys size, while snake survival depends in part on the choice of prey of appropriate size, i.e. within the limits dictated by these morphological characteristics.

Nevertheless, there are many reports of snakes encountered dead, with excessively large prey in their mouths (e.g. Barton, 1949; Howard, 1949; Godley, 1980; Hailey and Davies, 1986a, b). Some reports of occasional encounters and induced experiments suggest that young snakes capture excessively large prey at a higher frequency than adults, perhaps due to low availability of small preys, or by over-estimating ability to tackle large preys (Sazima and Martins, 1990). Recently, Caramaschi and Niemeyer (2012) reported a case of an unsuccessful predation of *Amphisbaena microcephala* (Wagler, 1824) by the snake *Elapomorphus quinquelineatus* (Raddi, 1820). This snake died after trying to swallow the amphisbaenid, which became stuck in the esophagus.

This paper relates the unsuccessful predation of an adult *Hemidactylus mabouia* (Moreau de Jonnès, 1818)

by a juvenile *Oxyrhopus petolarius* (Linnaeus, 1758), which resulted in the death of both.

On 16 July 2012, a specimen of *Oxyrhopus petolarius* (SVL= 327mm) was received at NEPAS (Núcleo de Estudos e Pesquisas em Animais Selvagens, Universidade Estadual do Norte Fluminense Darcy Ribeiro), located at Campos dos Goytacazes municipality, state of Rio de Janeiro, southeastern Brazil. The snake was alive when consigned to us, but presented a large distention located in the mid third of the body (presenting skin ruptures on this area – Figure 1A). The snake attempted to regurgitate several times.

By performing radiography (VMI-Philips Compacto Plus 500 – 39 kV / 0.03 mAs / mA 100), we became aware that the distention on the snake's body was caused by the ingestion of a lizard (Figure 1B). The snake was placed in a terrarium, but was found dead the next day. Necropsy allowed prey identification and evaluation of the damage caused by the ingestion of prey on that size. The prey, an adult *H. mabouia* (SVL= 144mm), caused ruptures of the final portion of stomach and the anterior portion of the intestine.

Snakes of the genus *Oxyrhopus* can forage on many kinds of prey, but are well known for eating lizards and small mammals (Duellman, 1978). *O. petolarius* is a fairly common colubrid species, widespread in parts of Central America and through South America (Savage and Villa, 1986; Markezich, 2002; Lynch, 2009; Palmuti et al., 2009; Costa et al., 2010). In Brazil, it can be found in many different habitats, such as Gallery Forests and Savannas (Vaz-Silva et al., 2007), Atlantic Forest (Santana et al., 2008), Amazon (Bernarde and Machado, 2000) and even urban areas (Costa et al., 2010).

Hemidactylus mabouia is an exotic species introduced to the New World, well established in anthropic and perianthropic environments, being found in many countries, including Brazil. It presents nocturnal habits and can be easily found in almost all Brazilian ecosystems (Vanzolini, 1978; Powell et al., 1998; Anjos

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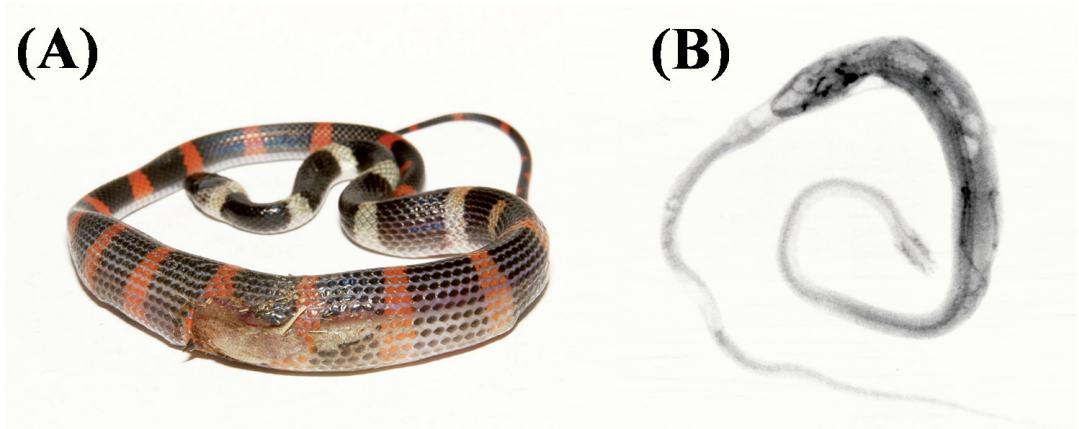


Figure 1. (A) Juvenile *O. petolarius*, with the mid third of the body distended, presenting skin ruptures; (B) Radiography image, indicating the ingestion of a lizard (Image colors were inverted on Adobe Photoshop CS4 v. 11.0, for better visualization).

and Rocha, 2008). Many authors reported predation of this lizard species, reporting *H. mabouia* as prey for birds, lizards, snakes and spiders (see Table 1). Due to the extremely wide range of *H. mabouia*, Table 1 probably incompletely represents the real spectrum of predators of this lizard species. This paper also represents the first predation record of *Hemidactylus mabouia* by *Oxyrhopus petolarius*.

Our findings reinforce data published by Sazima and Martins (1990), suggesting that snake death may have been caused by a mis-evaluation of prey size by a young snake.

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Table 1. Predators of *Hemidactylus mabouia* (Moreau de Jonnés, 1818)

Chordata (32)	Reference
Reptilia (30)	
Squamata (30)	
Sauria (4)	
Tropiduridae (1)	
<i>Tropidurus torquatus</i> (Wied-Neuwied, 1820)	Araújo (1991); Rocha and Vrcibradic (1998); Teixeira and Giovanelli (1999)
Gekkonidae (1)	
<i>Hemidactylus mabouia</i> (Moreau de Jonnés, 1818)	Zamprogno and Teixeira (1998); Pombal and Pombal-Jr. (2010)
Teiidae (1)	
<i>Cnemidophorus littoralis</i> Rocha, Araújo, Vrcibradic & Costa, 2000	Menezes et al. (2006)
Scincidae (1)	
<i>Mabuya agilis</i> (Raddi, 1823)	Vrcibradic and Rocha (2002)
Ophidia (26)	
Colubridae (22)	
<i>Borikenophis portoricensis</i> (Reinhardt & Lütken, 1862)	Grant (1932); Henderson and Sajdak (1996)
<i>Caeteboia amarali</i> (Wettstein, 1930)	Passos et al. (2012)
<i>Chironius exoletus</i> (Linnaeus, 1758)	Rodrigues (2007)
<i>Leptodeira annulata</i> (Linnaeus, 1758)	Cantor and Pizzatto (2008)
<i>Leptophis ahaetulla</i> (Linnaeus, 1758)	De Albuquerque et al. (2007)
<i>Leptophis depressirostris</i> (Cope, 1861)	Thomas (1976)
<i>Liophis flavifrenatus</i> (Cope, 1862)	De Lema et al. (1983); Michaud and Dixon (1989)
<i>Liophis typhlus</i> (Linnaeus, 1758)	Da Silva et al. (2010)
<i>Oxybelis fulgidus</i> (Daudin, 1803)	Santos-Jr. et al. (2011)
<i>Oxyrhopus clathratus</i> Duméril, Bibron & Duméril, 1854	Morato (2005)
<i>Oxyrhopus guibei</i> Hoge & Romano, 1977	Rocha and Vrcibradic (1998); Barbo (2008); Barbo et al. (2011)
<i>Oxyrhopus petolarius</i> (Linnaeus, 1758)	This study
<i>Oxyrhopus trigeminus</i> Duméril, Bibron & Duméril, 1854	Alencar et al. (2012)
<i>Philodryas nattereri</i> Steindachner, 1870	De Mesquita et al. (2011)
<i>Philodryas olfersii</i> (Lichtenstein, 1823)	Thomas (1976)
<i>Philodryas patagoniensis</i> (Girard, 1858)	Barbo et al. (2011)
<i>Siphlophis pulcher</i> (Raddi, 1820)	Sazima and Argôlo (1994)
<i>Siphlophis worontzowi</i> (Prado, 1940)	Bernarde and Abe (2010)
<i>Thamnodynastes pallidus</i> (Linnaeus, 1758)	Rocha and Vrcibradic (1998)
<i>Thamnodynastes strigatus</i> (Günther, 1858)	Bernarde et al. (2000)
<i>Tropidodryas serra</i> (Schlegel, 1837)	De Oliveira (2008)
<i>Tropidodryas striaticeps</i> (Cope, 1869)	De Oliveira (2008)
Elapidae (1)	
<i>Micrurus frontalis</i> (Duméril, Bibron & Duméril, 1854)	De Lema et al. (1983)
Viperidae (3)	
<i>Bothropoides alcatraz</i> (Marques, Martins & Sazima, 2002)	Marques et al. (2002)
<i>Bothropoides insularis</i> (Amaral, 1921)	Duarte et al. (1995)
<i>Bothropoides jararaca</i> (Wied, 1824)	Sazima (1992); Barbo (2008); Barbo et al. (2011)
Aves (2)	
Accipitriformes (1)	
Accipitridae (1)	
<i>Rupornis magnirostris</i> (Gmelin, 1788)	De Macêdo and Freire (2010)
Cuculidae (1)	
<i>Crotophaga ani</i> Linnaeus, 1758	Figueiredo-de-Andrade and Silveira (2012)
Arthropoda (2)	
Arachnida (2)	
Araneae (2)	
Ctenidae (1)	
Ctenid Spider	Lanschi and Ferreira (2012)

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