Rhagerhis moilensis (Reuss, 1834), as prey of Psammophis schokari (Forskal, 1775)

Psammophiinae are widely distributed SW Palearctic ophidians, and due to their diurnal activity, commonly observed during surveys (Bons & Geniez 1996). Nevertheless, most species are little known in terms of ecology and behavior in the wild. Whereas, Psammophis schokari (Forskal, 1775) is one of the most common snake species encountered in the Maghreb and in the Sahara, its ophiophagous behavior is not documented (Cottone & Bauer 2009). Rhagerhis moilensis (Reuss, 1834) is also a common snake in the western Old World desert ecosystems, a typical species that marks the limits between Saharan and Sahelian habitats (Trape & Mane 2006). Its exact distribution in the margins of the Sahara remains poorly known and maps are not accurate or up-to-date (Bons & Geniez 1996) due to difficult access to some areas. This is the first description of predation of P. schokari upon R. moilensis.
Forskål’s Sand Snake *Psammophis schokari*, is a snake (total length up to 1,400 mm, Geniez et al. 2004) with a large distribution range stretching from North Africa to the Middle East, as far as India (Sindaco et al. 2013). In Africa it is found in both Mediterranean and Saharan areas (Leviton et al. 1992; Schleich et al. 1996; Trape & Mané, 2006). In Morocco, it occurs mainly in the arid and semi-arid zones, being absent only from the Tangier Peninsula and northern Atlantic coast (Bons & Geniez 1996; Fahd & Plequezuelos 2001; Geniez et al. 2004). This snake is an opportunistic feeder but preys mainly upon lizards (Flower 1933; Bons 1967; Gruber 1989; Schleich et al. 1996; Cottone & Bauer 2009). Two studies on the diet of Moroccan individuals showed some preference for Gekkonidae and Lacertidae (Bons 1967; Fahd 2001). However, cases of predation upon small rodents and birds have been reported in other countries (see Gruber 1993; Schleich et al. 1996; Cottone & Bauer 2009), and there is an observation from Morocco upon predation on a passerine bird in April 2012 (C. and P. Baud, pers. comm.). Ophiophagy in this species, however, lacks concrete documented observations.

The Moila Snake, *Rhagerhis moilensis*, is a diurnal snake (total length up to 1,300 mm, Geniez et al. 2004) occurring in Saharan habitats from the Atlantic coast (Morocco, Mauritania) to the Middle East. A study by Geniez et al. 2004 reported its occurrence in both Mediterranean and Saharan areas. It is diurnal and preys mainly upon lizards. Two studies on the diet of Moroccan individuals showed some preference for Gekkonidae and Lacertidae (Bons 1967; Fahd 2001). However, cases of predation upon small rodents and birds have been reported in other countries (see Gruber 1993; Schleich et al. 1996; Cottone & Bauer 2009). There is also an observation from Morocco upon predation on a passerine bird in April 2012 (C. and P. Baud, pers. comm.). Ophiophagy in this species, however, lacks concrete documented observations.
deserts of Iran (BöHME & DE PURy 2011). In Morocco, it is reportedly absent from the Mediterranean and Sahelian habitats (GENIEZ et al. 2004) and the large erg formations (TRAPE & MANÉ 2006). According to the repartition mapped in BONS & GENIEZ (1996) there are no records along the northern margin of the Sahara in the area between Boudenib and Figuig in southeastern Morocco. However, recently some individuals were found between Belibilia and Mengoub (BARATA et al. 2011). The distribution map in SINDACO et al. (2013) correctly includes the Figuig area in the easternmost part of Morocco where R. moilensis was reported in August 2013 near the road north of Figuig (G. Martinez del Marmol Marin, pers. comm.).

On August 17, 2010, the authors observed an unsexed adult specimen of P. schokari ingesting a young R. moilensis in a small scrub (Fig. 1). The day was sunny, very dry and hot, typical of local end of summer (38 °C). The location (32.2725° N/1.467778° W, WGS84 datum) was a dry sandy plain of the Saharan northern margins of east Morocco near the city of Figuig. Vegetation was scarce, with spiny and succulent plants, typical of xeric habitats (Fig. 2). The predation sequence was observed only after P. schokari had started to swallow the head and first centimeters of the body of the Moila Snake. The observed event lasted 14 minutes (14:24 - 14:38 h local time). Psammophis schokari is regularly seen and usually tries to escape quickly from human presence, but in this particular case, did not flee or regurgitate the prey. Once the prey was totally swallowed, the snake escaped quickly. Completion of the predatory action was apparently given priority by the snake over the potential threat coming from the human observers.

Even if P. schokari is known to be mainly saurophagous, it is not surprising to observe an instance of ophiophagy. Both snakes are diurnal and can be syntopic. The fact that R. moilensis was a young snake may explain the success of the attack. It is highly unlikely that P. schokari exhibited a scavenger behavior in that case. In this area, animal corpses are infested by ants in the first ten minutes after death, and that was not the case on the fresh body observed in the predator’s mouth. Psammophis schokari remains one of the species whose dietary habits are poorly known. Particular attention should be paid to learn more about its ecology in general and trophic regime in particular.

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Fig. 2: General view of the xeric habitat near the city of Figuig (eastern Morocco) where the predation event took place. Photo: David Oudjani.

KEYWORDS: Reptilia: Squamata: Serpentes: Lamprophiidae: Psammophiinae; Psammophis schokari, Rhagerhis moilensis, predation, ophiophagy, behavior; Morocco, Sahara

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