

Smooth snake (*Coronella austriaca*) predation on a live grass snake (*Natrix natrix*) in eastern Romania

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Abstract. The smooth snake (*Coronella austriaca*) and the grass snake (*Natrix natrix*) are Palearctic species with wide distribution ranges, including in Romania, where they often occur in sympatry. The present note reports the first direct observation of a smooth snake ingesting a live grass snake, an event witnessed in the peri-urban area of Iași, Romania, on the 11th of May 2011. *C. austriaca* is generally characterized as saurophagous (preying predominantly on lizards), and ophiophagy was mainly previously reported in the form of cannibalism.

Key words: *Coronella austriaca*, *Natrix natrix*, feeding behavior, ophiophagy, trophic spectrum

The smooth snake (*Coronella austriaca* Laurenti, 1768) is a small sized (total length usually <80cm), viviparous colubrid that has a wide Palearctic distribution (Engelmann 1993). The grass snake (*Natrix natrix* (Linnaeus 1758)) is a relatively large (total length >100cm), oviparous natricid species with a similarly wide distribution range (Kabisch 1999). Both species are widespread in Romania and populate a large array of habitat types, frequently occurring in sympatry (Cogalniceanu et al. 2013). However, while the smooth snake mostly populates drier microhabitats, the grass snake usually prefers moister environments where it can feed on amphibians (e.g. Fuhn 1969).

Here we report a case of predation on a grass snake by an adult smooth snake. The observation was a chance encounter that took place during an ornithological survey in a peri-urban park from the city of Iași, Romania (47.1722° N; 27.6122° E).

On the 11th of May 2011, 1230h, one of the authors (MVHV) observed an adult (ca. 50-60cm total length) female smooth snake ingesting a young (ca. 50cm total

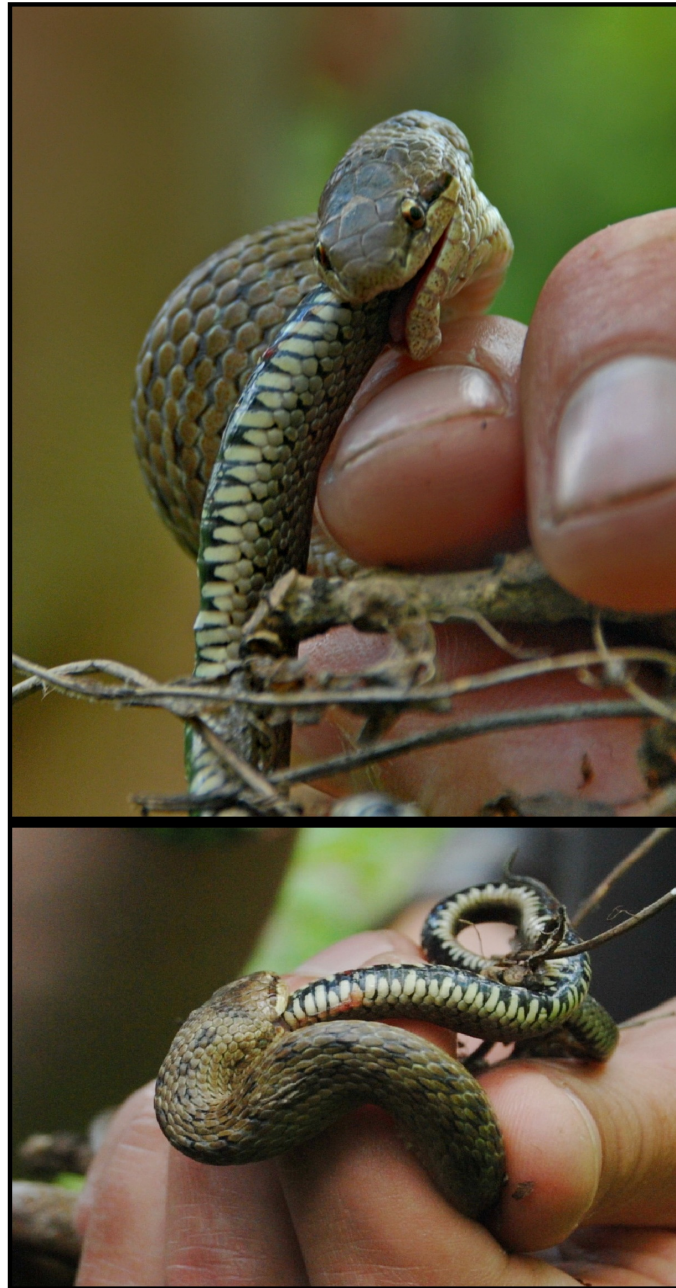


Figure 1. Photographs of the smooth snake ingesting the grass snake, taken immediately after their capture. Photos by MVHV.

length) grass snake. The animals were completely exposed, sitting on a narrow foot trail, roughly 0.5m from the shore of a lake and less than 5m from the edge of a planted deciduous forest. More than half of the body of the grass snake had already been ingested (Fig. 1) and the smooth snake was coiled around the posterior part of the grass snake's body, apparently constricting it. The snakes were picked up by hand on sight and, subsequently, the smooth snake regurgitated the still alive grass snake. Both animals were placed in a single cloth bag for further photography. However, ca. 30 minutes later, the smooth snake had completely consumed the grass snake while inside the bag. The smooth snake was subsequently released in the exact place of capture, during the same day.

The majority of feeding ecology studies, from throughout the smooth snake's range, characterize the species as predominantly saurophagous (up to 70% of the diet) while feeding far less frequently on small mammals, juvenile birds, small snakes and even insects (Arnold and Burton 1978; Bannikov et al. 1985; Engelmann 1993 and references therein; Luiselli et al. 1996; Drobenkov 2000; Moreira et al. 2011). Both juveniles and adults showed elevated responses to lizard chemical stimuli (Amo et al. 2004; Pernetta et al. 2009). Ophiophagy was mostly recorded in the form of cannibalism but adders (*Vipera berus*) and grass snakes have also been identified in the trophic spectrum of the smooth snake (Engelmann 1993; Bartłomiej 2001). To our knowledge, this report is the first one to describe a direct observation of a smooth snake ingesting a live grass snake.

Acknowledgements. We wish to express our gratitude to Dr. J. Crnobrnja-Isailović for her very useful comments and suggestions on a previous draft of this manuscript.

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