

Notes on the defensive behavior and activity of *Ablepharus kitaibelii* (Bibron & Bory de Saint-Vincent, 1833) in Bulgaria

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Abstract. The defensive behavior of the Snake-eyed skink is reported for the first time. It includes different strategies as hiding, spiral winding of the body, moving the tail in a worm-like manner, detaching the tail and limbs, thanatosis and even biting. Data on the observed activities of the species in the wild are also provided.

Key words: skink, tail, thanatosis.

Introduction

The Snake-eyed skink *Ablepharus kitaibelii* (Bibron & Bory de Saint-Vincent, 1833) is one of the smallest scincid species in the world. Most of the studies concerting the species accented on distribution and taxonomy (Štepánek 1937, 1944; Mertens 1952; Fuhn 1969, 1970; Schmidtler 1997; Ljubisavljević *et al.* 2002), while the biology and ecology of the lizard remain poorly investigated (Pasuljević 1965, 1966, 1975, 1976; Gruber 1981; Herczeg *et al.* 2007). So far information on the behavior of the skink is almost lacking.

In the current study data on the defensive behavior and activity of the species are presented.

Material and Methods

The general observations come from a four-year (2013–2016) population study of *A. kitaibelii* in the northwestern part of Bulgaria. The studied area is located on Pastrina hill, near the town of Montana, and covers ca. 0.6 ha of the ecotone zone between oak forest and a meadow, at an altitude of 280 m. The coordinates of the studied area are N43.384828, E23.301825 (Datum: WGS84, GCS). After being caught by hand, each individual (n = 415) was photographed with Sony Cyber–Shot DSC–HX300, its geographic coordinates were recorded, and then it was released at the same location. Some behavioral data collected in different parts of Bulgaria were also included.

Results and Discussion

In general, if dangerous situation is present, the Snake-eyed skink tries to hide quickly, most often burying itself in dense grass and soil or hiding in cracks in the ground and under stones, leafs, etc. (Fejérváry 1912; Beshkov & Nanev 2006). This protective behavior is the principal one described for this species.

It was established that the tail of the Snake-eyed skink had a very important role for the survival of individuals. A total of 59.3% of all caught individuals had missing or regrown tails. In juveniles the tail is bright orange-reddish (Fig. 1); with age it becomes darker, ultimately matching the body color. This presumably benefits young lizards because the bright color draws the attention of the predators to the tail. The juveniles even can move the



tip of their tails in a worm-like manner for additional attraction. When buried in the substrate or in the open, many of the juveniles spiral, with the tail being wound over the body for protection. Similar behavior was observed in adult individuals as well (Fig. 2).



Fig. 1. Juvenile *A. kitaibelii* from Pancharevo, Sofia with orange-reddish tail. Photography: N. Tzankov.



Fig. 2. Spirally wound adult individual of *A. kitaibelii* from "Sinite Kamani" area, Sliven town. Photography: A. Dyugmedzhiev.



In addition to missing tails, individuals with missing fingers and whole limbs were observed, probably a result of twisting their bodies in order to escape when bitten in by a predator. Rotter (1962) mentioned as potential predators for the Snake-eyed skink other reptiles: *Lacerta viridis* (Laurenti, 1768), *Zamenis longissimus* (Laurenti, 1768), *Coronella austriaca* Laurenti, 1768, *Lanius collurio* Linnaeus, 1758, as well as mammals such as Eulipotyphla and Mustelidae.

Another interesting behavior is the observed fake death (thanatosis) in both an adult (Fig. 3) and a juvenile specimen. This behavior is intended to deceive predators and deny their choice of prey.





Thanatosis of *A. kitaibelii* was also observed in an adult individual near Rozino village, Karlovo municipality on 13.06.2009 (G. Popgeorgiev, pers. comm.).

Another curious observation was the attempts of animals to bite. This occurred in several skinks during escape attempts while being held in hand by the researcher. The individuals were twisting their bodies, trying to free themselves, and eventually bit the fingers. Apparently, this is the final measure for obviating a predator.

Pasulević (1965) mentioned that the species is most active in the morning between 9:00 and 11:00 h and in the afternoon between 16:00 and 17:00 h., i.e. it has a bimodal activity. The shortest daily activity interval is observed in the summer. The author also mentioned that in spring and August its activity increases and the interval between the two activity peaks decreases. Similar observations of the activity of the species are reported by Rotter (1962). Rotter (1962) and Herczeg *et al.* (2007) mention that the skink is not active during the summer, and the hot months of the year. In the present study during the summer months, bimodal activity was observed – in the early morning and in the late afternoon to darkness. No night activity was noticed in this species on the territory of Bulgaria. In the spring, individuals are active throughout the day, which is possibly related to the breeding season of the species and the more active search for food. Active individuals



were also observed during drizzling rain, especially in warm weather. No activity was observed during heavy rain.

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