

Another case of melanism in the Grass snake *Natrix natrix* (Linnaeus, 1758) (Reptilia: Colubridae) from Bulgaria

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Abstract. A melanistic specimen of *Natrix natrix* from Plovdiv, Bulgaria was found. This is the third recorded case of melanism in the Grass snake in Bulgaria. Short morphological descriptions of the specimen, as well as some taxonomical and ecological comments are given.

Key words: *Natrix natrix*, Grass snake, melanism, Plovdiv, Bulgaria.

Introduction. The color polymorphism of the Grass snake (*Natrix natrix*) is varying from gray, gray-green to brown, with or without darker spots on dorsal side and with alternating black and white spots on the abdominal side (Biserkov & Naumov 2007a). Melanism (a dark, almost black coloration of the skin) is an adaptive mechanism in animals (King et al. 2006) and is rarely observed in the Grass snake, but is occasionally seen in the Dice snake (*Natrix tessellata*) in Bulgaria (Biserkov & Naumov 2007b).

So far there are only two records of melanism in the Grass snake from Bulgaria. Two specimens were reported by Buresh & Zonkov (1934) – one female from Kipilovo Village (Elena District) – UTM MH35, caught on 12.VII.1926 and one “pitch black” specimen with “two white longitudinal stripes of scales on the dorsal side” from Petrich Town (SouthWest Bulgaria) – UTM FL88, caught on 26.VI.1931. Another melanistic specimen was later reported by Naumov & Tomović (2005) from Zhaltyia giol, under Golyam Kupen peak in Sredna Stara Planina Mt. at 2100 m a.s.l. (UTM LH23), which is the highest known locality of the species in Bulgaria so far.

Material and Methods. Recently, a subadult, melanistic specimen of the Grass snake (Fig. 1) was discovered in the herpetological collection of the Department of Ecology and Environmental Conservation at the Faculty of Biology in University of Plovdiv, Bulgaria. The specimen was probably collected, during a previous parasitological study, because it was dissected and all of the internal organs were removed. The data on the label says that the specimen is *Natrix natrix* and was captured on 18.VI.1994 in Maritsa River, Plovdiv (Bulgaria) – UTM LG16. The collection number is “EH-1994-NN08”. Since the head of the specimen is missing, we examined the species’ affiliation further based on secondary characteristics, given by Biserkov & Naumov (2007a) and we confirmed that it is *Natrix natrix*.

Description of the specimen.

Coloration. The dorsal side of the body is completely black (Fig. 1). The abdominal side is typically black-and-white and the white spots are becoming smaller approaching the tail, which is completely black.

Morphometry and Pholidosis: L.corp. = 520(?) mm (the head of the specimen is missing), L.cd. = 110 mm, Sq. = 19, V. = 167(?), S.cd. = 54x2, A. = 1/1. Dorsal scales are strongly keeled and subcaudals are smooth.



Fig. 1. *Natrix natrix* – the melanistic specimen from Plovdiv, Bulgaria.

Discussion. The two specimens, described by Buresh & Zonkov (1934), the authors affiliate to a “var. *nigrescens*”, which in our opinion has no taxonomic value. The only certain taxonomic affiliations given by the authors of the two specimens are *N. natrix natrix* for the first one and *N. natrix persa* (described as “*bilineatus*” in the text) for the second one. The specimen reported by Naumov & Tomović (2005), as well as our specimen belong to the nominal subspecies.

The black coloration of all described specimens so far is perhaps due to some sort of adaptation to the environment. Most commonly, dark individuals become fitter to survive and reproduce in their environment as they are better camouflaged (King et al. 2006). The case of melanism with the specimen from Plovdiv perhaps may be explained with the so called “industrial melanism”. Industrial melanism is adaptive melanism caused by anthropogenic alteration of the natural environment in terms of industrial pollution (Allaby 1992). Still these are very rare mutations, which are hence selected for and over time so the population can adjust to a new equilibrium with the environment.

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