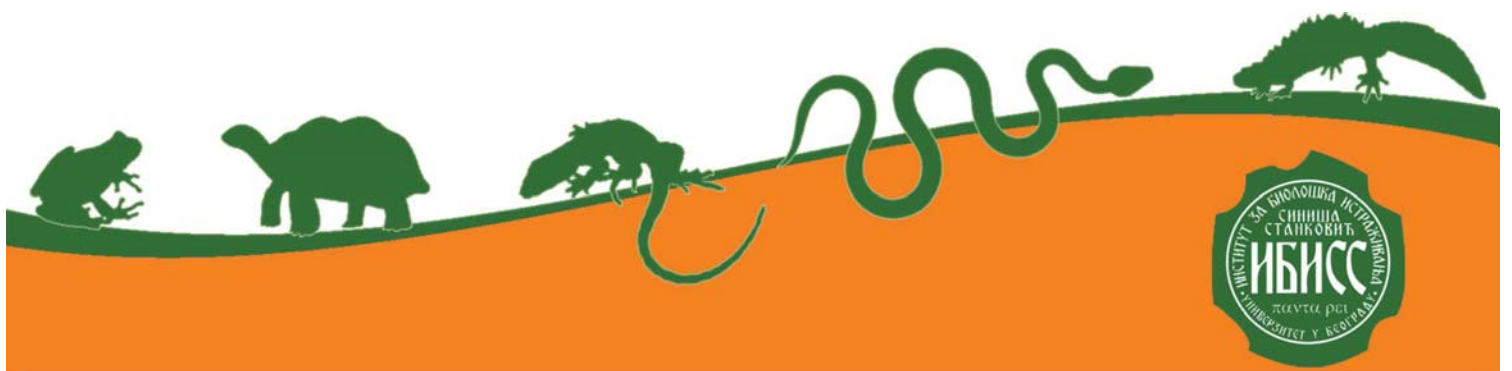




Program & Book of Abstracts

Belgrade
2022



Biology and evolution of behavior

Poster presentation

Barking Dogs Never Bite: Bluffing behaviour in dice snakes (*Natrix tessellata*)

Bjelica V.^{1,*}, Anđelković M.², Lakušić M.^{3,4,5}, Maričić M.¹, Arsovski D.⁶, Tomović Lj.¹,
Golubović A.¹

¹Faculty of Biology, Belgrade, Serbia

²Institute for Biological Research „Sinša Stanković“ – National Institute of Republic of Serbia, Belgrade, Serbia

³Universidade do Porto, Faculdade de Ciências, Departamento de Biologia,
Porto, Portugal

⁴CIBIO, Centro de Investigação em Biodiversidade e Recursos Genéticos, InBIO
Laboratório Associado, Campus de Vairão, Universidade do Porto, Vairão, Portugal

⁵BIOPOLIS Program in Genomics, Biodiversity and Land Planning, CIBIO, Campus de
Vairão, Vairão, Portugal

⁶Macedonian Ecological Society, Skopje, North Macedonia

*Corresponding author (e-mail): Vukašin Bjelica (vukasin.bjelica@bio.bg.ac.rs)

Prey animals have a wide array of strategies that they use to avoid or deter predators. In some cases, these strategies include warding off a predator attack by advertising strong chemical defences, such as venom, or by mimicking sympatric species, which do possess such defences (i.e. bluffing/mimicry). Dice snakes are nonvenomous natricine snakes that often live in sympatry with vipers. These snakes also have an ample arsenal of antipredator behavioural displays that include bluffing, characterized by hissing (auditory mimicry) with head flattening and fake strikes (visual mimicry). We measured the occurrence of bluffing displays in four different localities; on Golem Grad Island and in Konjsko (North Macedonia), where dice snakes share their habitat with nose-horned vipers (*Vipera ammodytes*) while in the other two localities, Mal Grad Island (Albania) and Pančevački rit (Serbia), vipers are not present. We analysed the effect of locality, size (snout to vent length) and sex on occurrence of bluffing as an antipredator strategy. Our results show that the occurrence of bluffing was significantly affected by locality and body size. Notably, in the two localities where dice snakes share the same habitat with vipers the occurrence of bluffing displays is significantly higher than in the two localities where vipers are not present. This possibly indicates a case of Batesian mimicry, reported for the first time in dice snakes. Additionally, our analysis shows that the predicted probabilities of the occurrence of bluffing increased with size. This seems intuitive, as bluffing behaviours should have a certain size threshold when they become effective, since small snakes can be easily consumed.