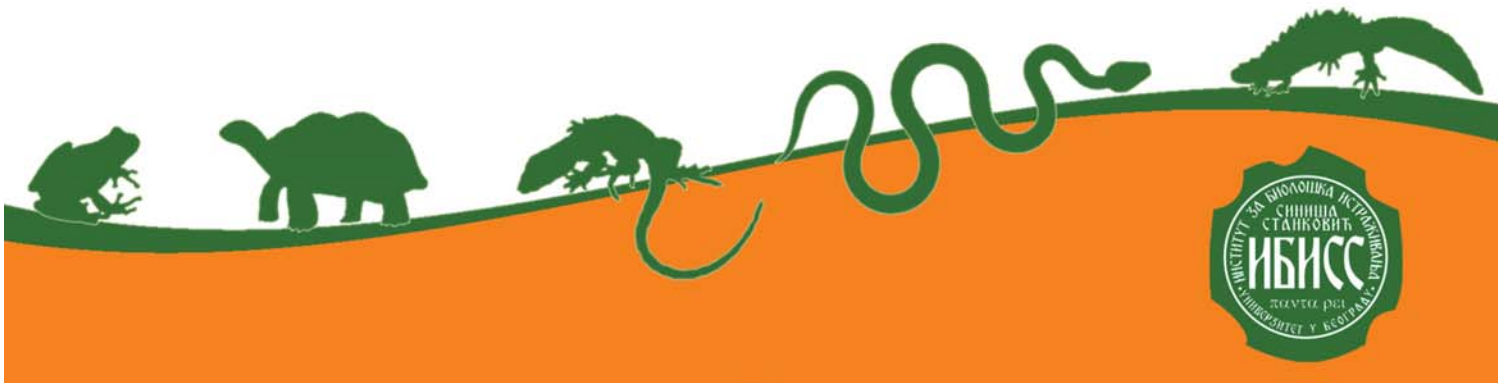
Program & Book of Abstracts

Belgrade 2022



Institute for Biological Research “Siniša Stanković”
National Institute of Republic of Serbia
University of Belgrade, Serbia

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EDITORS
Jelka Crnobrnja-Isailović
Tanja Vukov
Tijana Vučić
Ljiljana Tomović

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Dejan Brajović

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Tanja Vukov, Marko Mirč

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Oral presentation

How good are European tree frog (*Hyla arborea*) tadpoles in hiding?

Mirč M.[1,*], Vukov T.[1], Kijanović A.[1], Tomašević Kolarov N.[1]

[1]Institute for Biological Research "Siniša Stanković" – National Institute of Republic of Serbia, Belgrade, Serbia

*Corresponding author (e-mail): Marko Mirč (marko.mirc@ibiss.bg.ac.rs)

Amphibian tadpoles can avoid threats through defensive coloration and defensive behavior. Another response to the exposure to threats is shape modification. We studied if and how quickly can *Hyla arborea* tadpoles achieve crypsis, by changing skin pigmentation, when introduced to environments with different background colorations. We also analyzed the reversibility of the skin color change and how different backgrounds affect tadpole body length, shape, and ontogenetic pathways. In addition, we tested if tadpoles can perceive their own coloration and actively choose an appropriate background. For this purpose, we reared tadpoles on white and black backgrounds. Half of the tadpoles from each treatment were switched to the alternative background halfway through the experiment. Coloration and length data were collected six times during the experiment, while data for shape and ontogenetic pathways analysis were collected twice (before the switch and at the end of the experiment). The behavioral test was performed at the end of the experiment. Our results suggest that *H. arborea* tadpoles can rapidly respond to the changes in the environmental background and this color change is reversible, but adaptation to the white background is not that good. Even though some physiological costs of rapid color change, especially in switched treatments, surely exist, according to our results this stress is not great enough to be expressed in variation of tadpoles' body length. However, some shape differences between treatments were evident. Tadpoles who were initially introduced in the white background had deeper tail fins and more pronounced snouts, a typical shape response when predation risk is perceived. Our results, also suggest that *H. arborea* tadpoles can recognize their own coloration and actively choose appropriate surroundings to maximize crypsis. This study represents the basis for the future analysis of adaptive coloration as it has a very complex function in anurans.