

Summary

This PhD. thesis contributes to the investigation of aposematism – the phenomenon explaining occurrence of warning coloration in nature. Aposematism is an antipredatory strategy, usually based on predator learning to avoid a noxious prey with a conspicuous signal. However, not only particular aspects of aposematic prey signalling (warning colour pattern, conspicuousness, unpalatability), but also predator's psychology leading to avoidance behaviour is an important factor in the evolution of aposematism.

The differential species-specific response of nine species of our common passerine birds to living aposematic prey (the firebug) and corresponding underlying variation in predator's ecology requirements has been starting point of this PhD. thesis.

The next parts of the present thesis have been focused mainly on determination of these species that responds positively (throughout innate biases, better learning or memory etc.) to the warning signal of aposematic prey. The diversity of psychological processes leading to avoidance behaviour in these species has been assessed. Firstly, we investigate if the avoidance behaviour is acquired by learning or if the prey is avoided on the basis of innate biases in several species of family Paridae. Then we focused on mode of avoidance learning and durability of acquired behaviour in model species (great tits). The changes in memory for aposematic prey avoidance after the long-term retention interval as well as an importance of observational learning in naive or wild-caught predators have not been experimentally studied yet.

Observation learning is also necessary precondition for origin and spreading of new behavioural tradition in animals. In present theses is reported, finding of the population of black rats that probably posses independent tradition of pine-cone opening using the highly efficient technique known as stripping, which is one of the best examples of traditions described in animals.

The PhD thesis is based on the following papers: