

## **Abstract**

Ability to categorize objects to classes and react to members of one class similarly is important for animals, for example to facilitate discrimination between palatable and unpalatable prey. Objects are typically categorized according to their common features. Birds mainly use visual perception and so their prey also signals its unpalatability visually, through aposematic coloration. We studied the ability of great tits (*Parus major*) to categorize prey into classes of palatable and unpalatable according to its appearance. Birds were divided to three experimental groups, each tested with different categories of prey. First group was trained to discriminate between aposematic species of true bugs (Heteroptera) and non-aposematic species from other insect taxa. Second group was trained to discriminate non-aposematic species of true bugs and species of other insect taxa and the third in discrimination of pseudocategories, consisting of randomly assigned stimuli from the first experimental group. Tested birds were wild-caught adults and naïve, hand-reared juveniles. Juveniles were tested only in first two experimental groups. All birds were first trained in discrimination between the two categories and then tested in a generalization test with new stimuli. Both adults and juveniles learned to discriminate and categorize aposematic and non-aposematic bugs at similar rates, adults learned a little faster. Birds tested in discrimination of pseudocategories learned the task slower and they were not able to categorize prey successfully after the training. In the generalization the group tested with aposematic prey reached higher rate of correct decisions than the group tested with non-aposematic prey. When there is a possibility to focus on aposematic coloration, it is easier for birds to generalize to novel prey than when the prey is non-aposematic. Birds tested with pseudocategories failed in the generalization test, they responded randomly to prey from both categories. We tested also reactions of birds to every particular prey species and we found that birds from both groups used similarity in colour, not in a shape, of insect for categorization.

**Key words:** category formation, avian predators, unpalatable prey, mimetic complex, non-mimetic prey, pseudocategory