Abstract

Communication among animals often relies on visible signals and the ability to compatibly perceive them. Correct signal perception is especially important for animals with male sexual selection. In my master's thesis, I am addressing the issue of how does a male golden-ringed dragonfly (*Cordulegaster boltonii*) recognize a female of the same kind and therefore, what is the main trigger of copulation behavior. Dragonflies display a wide variety of colors and possess very big eyes. These characteristics already suggest that they are very liable on color vision (Futahashi, 2015). Their sight is perfectly developed within the insect class and plays the most important role in the imagines in comparison to other senses. The ability to orient themselves using sight is not just important for orientation in space, nonetheless it is important for reproduction. Since golden-ringed dragonflies do not demonstrate visible color dimorphism, previous as well as my research suggests that the key role for female reconnaissance is primarily their typical movement above water surface during oviposition. In my research, I presented variable types of lure - females to male golden-ringed dragonflies and I observed what is the foremost trigger of reproduction behavior in the males. Besides the above mentioned female movement I achieved to demonstrate that the males perceive also the markings respectively the black striping of their counterpart. Moreover, I confirmed my hypotheses that if a male performs the same movements as a female, the other males do consider him a female. Golden-ringed dragonflies do not display color sexual dimorphism therefore the movement is the key signal which allows the male to recognize the sex of another dragonfly. I further examined if the males would react positively to an artificial substitute and how much would their reactions differ from the reactions to a proper female dragonfly. Since recently several studies addressed also the ability of ultraviolet light perception within sexually dimorphic kinds of dragonflies, I attempted to determine if golden-ringed dragonflies possess and perceive UV markings as well. It turned out that golden-ringed dragonflies reflect UV markings among each other and even with more significantly stronger stimuli by which a male recognizes a female, the absence of UV markings significantly lowers their reactivity.

Key words: dragonfly, Odonata, *Cordulegaster boltonii*, golden-ringed dragonfly, reproductive behaviour, behaviour ecology