Abstract

Parasites could represent an important evolutionary driver and play an important role in a sexual selection. In the mate selection process, females use secondary sexual ornaments, which may reflect the parasite load and health condition of males. Females would benefit from choosing males with the most extravagant sexual characters, which indicate low levels of parasite infestation. A popular model species for sexual selection study is the barn swallow (*Hirundo rustica*). However there are no recent studies investigating the relationship between the level of the ectoparasitic infestation and the ornamentation of the barn swallow. Results of this thesis, based on analysis of ectoparasite load in 204 individuals show, that the level of infestation by feather mites is positively correlated with outermost tail feathers and the intensity of feather holes is negatively correlated with a breast coloration. The relationship between the abundance of ectoparasites and white tail spots was not found. The effect of ectoparasites on the survival of individuals or the nest initiation date was not observed. A possitive relationship between the individual seasonal change in feather mites infestation and brood size was detected. This implies a potential trade-off between the investments into parental care and defence against parasites. Feather mite load was positively associated with H/L ratio (hematological stress indicator) in males. Simultaneously the occurence of nest mites was monitored. It has been shown that the prevalence of nest mites in the study population is relatively low (19% nests). There was no correlation between the occurence of nest mites and the ornamentation of adults or the parasitic load of adults. Collectively, results of this thesis suggest that ectoparasites may play some role in affecting host condition and reproductive decisions in barn swallows.

Key words: *barn swallow, parasites, secondary ornaments, sexual selection, hematology*