# ABSTRACT

Sexual selection is the major selective agent responsible for evolution of male extravagant traits including coloration. However, such traits (sometimes less pronounced) often occur in conspecific females as well, although these characters don't have to necessarily constitute an advantage of them. The reason for this might dwell in the presence of genetic correlation between the sexes. Because of sharing most of genome by males and conspecific females, selection pressure centered on one sex can affect phenotype of the other. Conspicuous coloration of killifish males ranks among sexual selected characters. However, brighter individuals are more likely to be exposed to enhanced predation. In killifish, ancestral state was probably inconspicuous, monomorphous coloration. Apparently as a result of genetic correlation, correlated enhancement of coloration in both sexes has supervened during the evolution of this group. Nevertheless, in some groups we can observe radical disengagement of male and female coloration, so that conspicuous coloration in females was eliminated. In my diploma thesis, via simple hormonal manipulation I have tried to explore proximate mechanisms which enable breakage of intersexual genetic correlation in killifish. In the proximate view it would be possible to achieve entire breakage (or at least restriction) of intersexual correlation either through the attachment of sexually dimorphous character to sex chromosomes, or through the sexually specific expression of character associated with autosomal locus (e.g. hormonal controlled). Two genera, each one with different extent of sexual dichromatism (*Nothobranchius korthausae*: colorful males, cryptic females; and *Fundulopanchax gardneri*: both sexes relatively bright coloration), were exposed to effects of 17α-methyltestosterone (androgen) and flutamide (antiandrogen), in order to elucidate the role of level of sex hormones and genetic control of male secondary sexual characters during the evolutionary change of intersexual genetic correlation. I found out, that sexually selected characters are linked to autosomes within both species and different male and female coloration is enabled by sexually specific expression of autosomal genes. The dissolution of limits created by intersexual genetic correlation occurred only through the substantial extension of already existing mechanisms. In second step, I examined influence of androgens on behavioral phenotype of killifish. Testosterone increased aggressiveness of males and females of both species,

although it didn't induce male epigamic behavior in females. It suggests that testosterone influences directly level of aggressiveness but its role in epigamic behavior is indistinct. In experiments concerning male choice, males of both species didn't explicitly prefer any of experimentally influenced females group (flutamide, 17α-methyltestosterone) in comparison with control females. So probably the male choice doesn't play any expressive role in sexual selection in killifish.