General Biology

THE EFFECT OF VISUAL OBSTRUCTIONS ON COURTSHIP INTERFERENCE BY MALE GUPPIES: THE IMPORTANCE OF PRIVACY

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ABSTRACT

Numerous studies have shown that female choice has an effect on the evolution of elaborate secondary sexual characteristics, however the outcome of sexual selection by female choice may vary between populations or species depending on differences in ecological or social conditions. This study examined the effect of habitat structure on the frequency of courtship interference behavior by male guppies (*Poecilia reticulatta*). We wished to determine whether the ability of males to observe other courting males would affect the rates of male courtship and courtship interference, which could in turn affect the expression of female preferences. Specifically, we manipulated visibility using opaque barriers in laboratory aquaria and observed the effect of visual obstructions on male courtship and interference behavior in experimental groups of guppies. As we predicted, male interference behavior was significantly reduced when visual obstructions were present. The presence of visual barriers, however, did not appear to affect rates of courtship displays. Evidently, the barriers impede visibility enough that males are less likely to observe and interfere with the courtship activity of other males. This leads us to suggest that the structure of the habitat in which guppy populations live and mate may have an effect on their sexual behavior, especially male-male competition, and that this could in turn affect female choice and the evolutionary outcome of sexual selection.