Reinforcement of Female Mating Preferences in Sympatric vs. Allopatric Populations of *Lucania goodei* and *L. Parva*

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Abstract

Low fitness of hybrid offspring can generate selection on mate preferences so individuals avoid mating with heterospecifics. This process is known as reinforcement and is observed as increased behavioral isolation in areas of sympatry compared to allopatry. We performed female-choice behavioral trials in which females of Lucania parva and Lucania goodei were allowed to choose between conspecific or heterospecific males. We tested females from both sympatric and allopatric populations using a novel female choice assay. Measures of time spent with each male revealed that females of sympatric populations prefer their own species significantly more often than females from allopatric populations. This pattern of preference was seen in both L. parva and L. goodei females. This shows that females prefer males of their own species only when from populations where there is the opportunity for hybridization. Our data suggests that reinforcement of female mate preference has occurred in sympatric populations of L. parva and L. goodei.