

Courtship performance as function of body condition in an 'ancient' form of sperm transfer

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Abstract

In most animal species, body condition has a fundamental role in fitness. In males, sexual selection generally favors larger body size or greater weight. This may result in males with better condition performing more vigorous courtships, and biasing female preferences. The effects of body condition on mating performance have been extensively studied in different animal groups. Among arachnids, scorpions are an interesting group for evaluating the effects of these sexual traits on mating performance, since they exhibit an ancient mode of indirect sperm transfer. Scorpion males deposit a single spermatophore on the soil to transfer the sperm to the females, and therefore, the production of spermatophores involves a high cost for them. In this study, we use the scorpion *Bothriurus bonariensis* as a model to evaluate different patterns of sexual behavior as a function of the body condition of both males and females. We found that males with a better body condition performed the mating dance stage more quickly than males with a lower condition. In addition, males performed the sexual sting behavior for a longer time with females in a better condition. Our results suggest that a better condition provides a mating advantage to males and represents an indicator of courtship performance. Given that female quality is usually correlated with fecundity, males mating with females with a better body condition probably have higher reproductive success.

Keywords

Body condition, mating, scorpions, sexual selection

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Supplementary material

Supplementary video S1. Sexual sting behavior performed during the courtship of a mating pair of *B. bonariensis*.