Male Australian redback spiders employ courtship strategies to preserve their life

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(PhysOrg.com) -- New research shows that male suitors of a female cannibalistic spider risk facing a premature death unless they perform an adequate courtship lasting a minimum of 100 minutes. Further, the research shows that "sneaker" males can slip by and mate successfully on the courtship efforts of the hard-working first suitor.

Scientists at the University of Toronto Scarborough have published a research paper titled "Female's courtship threshold allows intruding males to mate with reduced effort" in the prestigious journal, Proceedings of the Royal Society B. The study provides new findings on the mating habits of the poisonous Australian redback spider (*Lactrodectus hasselti*), a member of the black widow family where females are larger in size compared to males.

According to the research, if a male tries to mate without investing sufficient time and energy in courtship, the female spider will kill him and mate with his rival. However, weaker males, or those looking to expend little energy, have found a way to reap the rewards of the more committed suitor.

"The second 'sneaker' male slips by and mates successfully, essentially acting as a parasite on the effort of the first, hard-working male," explains Maydianne Andrade, associate professor and Canada Research Chair of the Integrative Behaviour and Neuroscience group at the University of Toronto Scarborough.

"One of the surprising outcomes from the study is that females are unable or unwilling to discriminate the sources of courtship," said Jeffrey Stoltz, PhD candidate in the department of biological sciences at U of T Scarborough and co-author of the study. "This has provided the opportunity for intruding males to exploit the reproductive efforts of rivals and thereby circumvent female choice."

Adds Andrade, "Female choice using thresholds have been predicted in theory, but this is one of a few quantitative demonstrations of such a decision rule in action and the first to show that males can use the female's decision rule to exploit the reproductive efforts of rivals."

Source: University of Toronto (news : web)

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