Feast or fancy? Black widows shake for love

January 16 2014

Credit: Sean McCann / Simon Fraser University

(Phys.org) —A team of Simon Fraser University biologists has found that male black widow spiders shake their abdomens to produce carefully pitched vibrations that let females know they have "come a-courting" and are not potential prey.

The team's research has just been published in the open access journal *Frontiers in Zoology*.

SFU graduate students Samantha Vibert and Catherine Scott, working with SFU biology professor Gerhard Gries, recorded the vibrations made by male black widow spiders (Latrodectus hesperus), hobo spiders (Tegenaria agrestis) and prey insects.

Scott explains: "The web functions as an extension of the spider's exquisitely tuned sensory system, allowing her to very quickly detect and respond to prey coming into contact with her silk.

"This presents prospective mates with a real challenge when they first arrive at a female's web: they need to signal their presence and desirability, without triggering the female's predatory response."

The researchers found that the courtship vibrations of both species differed from those of prey, but that the very low-amplitude vibratory signals produced when male black widows shake their abdomens were particularly distinctive. "These 'whispers' may help to avoid potential attacks from the females they are wooing," explains Scott.

More information:
www.frontiersinzoology.com/content/11/1/4/abstract

Provided by Simon Fraser University