DEADLY SPIDER REQUIRES LONG COURTSHIP—OR ELSE

Female Australian redback gets almost 100 minutes, or it will eat suitor

DISCOVERY CHANNEL Jennifer Viegas, Oct. 21, 2009

Females of the Australian redback spider, one of the world's most poisonous spiders and a close relative to the black widow, demand 100 minutes of courting or else they usually cannibalize their male suitors.

Recent research shows that bigger isn't always better in the mating game. The tiniest of males sometimes approach female redbacks after offering the critical 100 minutes of wooing and successfully mate without being eaten.

The study shows that puny males of this species can win at love without exerting much effort and begins to explain the extreme size differences between males and females among some spider species. It appears as though females are not tuned to select male size, but rather the duration of courtship.

A male first performs a lengthy "courtship dance," where it vibrates the female's web and wraps it in his own silk to reduce the emission of pheromones that could attract other males. He then drums on her abdomen and may alternate between drumming and web dancing. If he does this for less than 100 minutes and then attempts mating, the female will begin her cannibalism.

But if he meets her desired courtship threshold, he may be able to mate and survive. If not, he's usually eaten and then other males enter her web, sometimes fighting with each other to get to her. Females appear to act as a referee and strike at males with their forelegs as males escalate aggression towards one another.

The bizarre process may help to explain why male spiders are often so much smaller than females. For this species, males carry 1 to 2 percent of the body weight of a typical female.

Smaller males likely mature faster and can therefore mate earlier in life. And tiny males may be better equipped to scramble faster towards females and their webs. Bigger females, on the other hand, may have greater reproductive success, so the species winds up with enormous females and minuscule males.

Researcher Mariella Herberstein concluded, "The question that remains is why females have not evolved a way of discriminating between two courting males in her web. It may be that distinguishing the sources of vibrations in a complex three-dimensional web is very difficult, an aspect that males clearly take advantage of."