

Male orb-weaving spiders cannibalized by females may be choosy about mating

June 1 2016



This image shows copulation and sexual cannibalism in *Cyrtophora citricola*. (A) shows the final approach of the male before he inserts his pedipalp (the sperm delivery organ) into the genital opening of the female (B). The female bites the abdomen of the male while the pedipalp is still attached (C). Credit: Yip et al.

In a colonial orb-weaving spider, *Cyrtophora citricola*, females often eat the males after mating, but it is often the males that choose their mates, according a study published June 1, 2016 in the open-access journal PLOS ONE by Eric Yip from Ben-Gurion University of the Negev, Israel, and colleagues.

Choosing a high quality mate can confer advantages on an animal's offspring. Due to the relatively low abundance of eggs compared to sperm, the choice is often made by females, while males attempt to increase their number of offspring by mating promiscuously. However,

this may be different in species that exhibit [sexual cannibalism](#), like the group-living *C. citricola* [spider](#), where males are often eaten after mating and so may be "choosier" due to a single mate choice. The authors of the present study investigated how sexual cannibalism may promote male choosiness by pairing captured virgin male and female orb-weaving spiders randomly in the laboratory and observing which sex was more selective and which mates were selected.

The researchers found that males were choosier than females and were twice as likely to mate with well-fed females, which may be a proxy for fertility. Females ate more than 80% of their mates. The authors suggest that cannibalism by females may therefore act to promote the evolution of mate choice by males.

Eric Yip notes: "With over 80% of males cannibalized after their first copulation, males need to make their one shot at paternity count. In a colony, males are likely to encounter multiple receptive females, and we found that [males](#) prefer to court and mate with younger, fatter, and therefore potentially more fecund [females](#)."

More information: Yip EC, Berner-Aharon N, Smith DR, Lubin Y (2016) Coy Males and Seductive Females in the Sexually Cannibalistic Colonial Spider, *Cyrtophora citricola*. PLoS ONE 11(6): e0155433. [DOI: 10.1371/journal.pone.0155433](https://doi.org/10.1371/journal.pone.0155433)

Provided by Public Library of Science

Citation: Male orb-weaving spiders cannibalized by females may be choosy about mating (2016, June 1) retrieved 30 April 2024 from <https://phys.org/news/2016-06-male-orb-weaving-spiders-cannibalized-females.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.