

Bigger beetles more likely to choose large females and to reject smaller ones

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Being bigger and bolder holds various benefits for male soldier beetles. They enjoy higher rates of successful courtship and more often land a larger, more fertile mate. These are some of the findings of a study led by Denson McLain of the Georgia Southern University in the US, published in Springer's journal *Behavioral Ecology and Sociobiology*.

The goldenrod soldier beetle or Pennsylvanian leatherwing (*Chauliognathus pennsylvanicus*) is native to Northern America. During its peak reproductive season, between September to early October, it only mates once a day. This normally happens in the afternoon. Courtship goes hand in hand with lots of fighting, tussling and evasion tactics. Males engage in short flights to search for foraging [females](#). When the male does land near a female, a chase may ensue in which he uses his antennae and forelegs in an attempt to capture her.

Females are generally able to side-step a smaller-sized suitor, but not so when the male is relatively large. Once captured, some wrestling often follows as the male attempts to mount the female. She may kick at him, shake violently in an apparent attempt to dislodge the male, or even curl her abdomen away to avoid genital contact.

McLain's team collected soldier beetles during the 2006 to 2012 breeding seasons in the foothills of the Blue Ridge Mountains in northern Georgia. The insects were then observed during various laboratory tests to ascertain how they choose their mates, the duration of copulation, and how persistent they were while courting.

It was found that larger females and [males](#) were more likely to mate compared to smaller ones. Whereas the bulkier males were most often out courting the females, the more diminutive ones quite often spent their time just resting or foraging. When they did do some courting, the smaller males were much more random in their approach and choice, mating with larger females in 21 of 44 cases. In contrast, large males appeared to exercise a very specific size-related preference, mating with larger females in 31 of 40 cases. The bigger ones were also much more likely to encounter and mate a more fecund or reproductively strong female and reject a lesser one.

"Large males of the soldier beetle exercise choice for larger females," says McLain, in summarizing the findings. "Because larger males spend more time searching for mates and courting than do smaller males, it could increase their likelihood of encountering and mating a large female, even after rejecting a smaller one."

More information: "Size dependence of courtship effort may promote male choice and strong assortative mating in soldier beetles," *Behavioral Ecology and Sociobiology*. [DOI: 10.1007/s00265-015-1900-6](https://doi.org/10.1007/s00265-015-1900-6)

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