

Armed beetles find a mate, whatever their size

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Librodor japonicus. Credit: Kensuke Okada

One species of armed beetle is proving that size doesn't necessarily matter when it comes to finding a mate. The creature's 'pulling techniques' will be revealed in the April edition of the *Royal Entomological Society's Ecological Entomology* journal.

In the world of armed beetles, biggest is usually best, as males often fight for mating rights and those with the largest jaws beat off the competition. However, this is not always the case with one particular species.

Researchers at Okayama University in Japan have been monitoring the mating habits of large, medium and small *Librodor japonicus* males, and found that this particular species adopts a different tactic to finding a mate depending on the size of certain body parts.

The largest male beetles wait for females at the feeding areas and fight for the right to mate – the males with the biggest jaws stand the best chance of winning. The medium sized beetles which are too small to beat the bigger males have developed relatively bigger wings than their larger

counterparts, and they use these to search for the feeding sites which are unoccupied by large males.

The smallest male beetles have adopted a completely different tactic – they stay at the feeding sites with the big males, and attempt 'sneaky matings' with females behind the bigger male's backs. What's more, these males have relatively larger testes and produce sperm that is more competitive than the bigger males.

The *L. japonicus* beetles have ensured that, through their size-determined mating tactics, they all have a chance of finding a mate, and sometimes with no fighting involved.

Researcher Takahisa Miyatake said, "Although other studies of armed beetles have observed 2 different sizes of males, we have shown that males can adopt up to three different behavioural tactics to improve their mating success."

Source: Wiley

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