

Trap-jaw ants exhibit previously unseen jumping behavior

December 1 2015



A species of trap-jaw ant, *Odontomachus rixosus*, has been found to exhibit a previously unseen jumping behavior, using its legs rather than its powerful jaws. The discovery makes this the only species of ant that can jump with either its legs or its mandibles. Credit: Magdalena Sorger

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jumping behavior, using its legs rather than its powerful jaws. The discovery makes this species, *Odontomachus rixosus*, the only species of ant that can jump with either its legs or its mandibles.

"Jumping behavior in [ants](#) is incredibly rare," says Magdalena Sorger, a recent Ph.D. graduate at North Carolina State University and sole author of a paper reporting the discovery. "Out of 326 genera of ants, only three genera jump using their [legs](#). Another three genera are known to jump using their jaws. But now we know that one species of jaw-jumping ant uses its legs as well. That's extremely interesting."

It's long been known that all *Odontomachus* species are capable of hurling themselves through the air using their jaws, and they can do this in two ways.

They can "escape jump" to flee a threat by snapping their jaws against the ground, which throws them into the air. When they do this, they often land on their backs and appear to have little control over where they land. They can also do a "bouncer defense jump," using their jaws against whatever's in front of them to propel themselves backwards. But, as with the escape jump, they often land haphazardly.

But while doing fieldwork in Borneo, Sorger observed a type of jumping behavior in *O. rixosus* that had never been previously reported in any *Odontomachus* species.

The new behavior, which Sorger calls a leg-jump, appears to be used primarily - if not exclusively - as an escape mechanism. But it differs from other *Odontomachus* jumping behavior in that the jumps are powered by the ant's legs and it allows the ant to aim for a specific landing site. Video of the ant's jumping behavior:

"I can't rule out that these leg-jumps may be used for prey capture, but I

did not see that in the field," Sorger says. *O. rixosus* only exhibited the leg jumping [behavior](#) when fleeing a disturbance.

"It's odd, evolutionarily, that this species would have developed two ways of jumping - driven by the [jaws](#) or the legs," Sorger says. "I'm hoping to better characterize the physiological mechanism that powers the leg jumps, and to determine what evolutionary advantage this [species](#) derives from the leg jumps. In theory, the advantage must be significant."

The paper, "Snap! Trap-jaw ants in Borneo also jump using their legs," will be published Dec. 1 in the journal *Frontiers in Ecology and the Environment*.

Provided by North Carolina State University

Citation: Trap-jaw ants exhibit previously unseen jumping behavior (2015, December 1)
retrieved 25 April 2024 from
<https://phys.org/news/2015-12-trap-jaw-ants-previously-unseen-behavior.html>

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