

# An unprecedented role reversal: Ground beetle larvae lure amphibians and prey upon them

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Usually it's the frog that catches the unsuspecting bug for a tasty snack, but in an unprecedented predator-prey role reversal, a certain group of ground beetle larvae are able to lure their amphibious would-be predators and consume them with almost 100% success. In a report published today in the online journal *PLoS ONE*, researchers begin to describe how these larvae are able to pull off this feat.

According to the researchers, larvae of the genus *Epomis* combine a sit-and-wait strategy with unique movements of their antennae and mouthparts to draw the attention of an amphibian (frogs and toads were used in the study). As the amphibian, thinking it has spotted potential prey, comes closer, the larva increases the intensity of these enticing motions. Then, when the amphibian attacks, the larva almost always manages to avoid the predator's tongue and uses its unique double-hooked mouthparts to attach itself to the amphibian's body and initiate feeding, which can include both sucking of bodily fluids and chewing body tissues, usually killing the much larger amphibian.

"Interestingly, adult beetles and larvae of species related to *Epomis*, are commonly preyed upon by amphibians," says the senior author Gil Wizen. "It seems that instead of serving as food items for amphibians, *Epomis* [larvae](#) have evolved to specifically take advantage of amphibians as a [food source](#)."

These findings extend the perspective of co-evolution in the arms race between predator and prey and suggest that counterattack defense behavior has evolved into predator-prey role reversal. However, the mechanism of the larva's swift counterattack against the speedy amphibian is still unknown.

**More information:** Wizen G, Gasith A (2011) An Unprecedented Role Reversal: Ground Beetle Larvae (Coleoptera: Carabidae) Lure Amphibians and Prey upon Them. *PLoS ONE* 6(9): e25161.  
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