

Assassin bug uses a 'slight of leg' to deceive and subdue physically superior prey

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Predator becomes prey. Credit: Matthew Bulbert

(Phys.org) —Macquarie University scientists have unveiled a deceptive luring tactic used by the nymphs of the Feather-legged Assassin bug, requires the bugs to be physically attacked by its ant-prey before the bug will attempt to capture it.

Dr. Matthew Bulbert and co-researchers at Macquarie University and University of New South Wales discovered that the bugs initially lure

ants by waving their namesake – dense hairy hind legs – at encroaching ants.

"Luring behaviour is a relatively well know predatory tactic. The most known example of course are Anglerfish that that use a rod-like appendage extending from the top of the fishes head to dangle a 'lure', in front the anglers mouth,"said Dr Bulbert.

"There are however many examples of luring in the [animal kingdom](#) with other lurers have less elaborate lures but just as effective, such as tail-waving in lizards, tongue-luring in turtles and snakes, and toe-waving in frogs and toads."

However, such luring behaviour has been seldom observed in invertebrates, and it was the proceeding phase of the behaviour that really surprised the researchers.

"In all documented cases of luring behaviour, the lurer always attempts to strike its [prey](#) before it can make contact with the lure. It makes complete sense as damage to the lure would presumably lead to starvation. So to encourage their prey to physically attack the luring device, which in this case is the bug's leg, seemed particularly absurd" says Bulbert.

This is not only the first example of a lurer requiring its prey to attack first, but is the first documented case of any predator encouraging its prey to attack the predator before it itself will attempt prey capture. Furthermore, the prey the bugs attack are formidable predators, in some cases 500% larger than the bug itself.

"What surprised us even more was the type of prey the bugs were enticing to attack. Australian bull ants are amazing hunters, they are highly visual, have large powerful jaws and lethal insect specific venom

– venom that many Australians know too well as it hurts like hell."

In an attempt to understand just how flexible the bugs predatory strategy is Dr. Bulbert starved some bug individuals before exposing them to ant-prey.

"We found that despite the bugs being 'hungry' they still did not attack the ants until the ant had made substantial contact with the leg, that is, clasp and even attempt to sting the leg. In fact even if the ant was touching and directly eyeball to eyeball with the ant the bug would not attack,

"In a sense the strategy is equivalent to a jackal trying to capture a lion but only after the lion has grabbed the jackals leg. Unlike the jackal scenario, the bugs have these specialised legs that are seemingly reinforced to withstand the attackers assault."

Despite the obvious threat imposed by eating such formidable prey, the bugs are practically 100% successful once the ant grabs the bugs leg. Once the ant is committed the bug then attacks the ant through an acrobatic manoeuvre that involves the bug repositioning itself above the ant to insert its dart like mouthpart behind the head of the ant – the one location an ant is incapable of defending. The researchers reasoned that the act of allowing the ant to attack first reduces the risk to the bug rather than escalate the threat.

"When the ant grabs the bug's leg it uses all of its attacking weapons in their attempt to subdue the leg. In so doing the ant has nothing left to defend itself against an attack and especially one directed from the rear of the ant."

So, a strategy that appears to be risky and absurd is instead an elegant and seemingly risk-free tactic to nullify the fighting prowess of its

dangerous ant-prey.

Provided by Macquarie University

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