Ant-mimicry in reverse by a colourful jumping spider from South-East Asia

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Batesian mimics avoid predators by imitating visual, acoustic or chemical signals of a dangerous or unpalatable prey species. Ants are a particularly common model for mimics to resemble. Many predators have a strong aversion to ants because they have an arsenal of defences such as being able to sting, bite or spray acid. *Orsima ichneumon* is a jumping spider from South-East Asia that has been proposed to be an ant-mimic in reverse. They have elongated spinnerets that resemble insect antennae and mouthparts, and strong abdominal constrictions which gives the appearance of an ant's head and thorax. However, *O. ichneumon* are spectacularly coloured, leading researchers to question their likelihood as ant-mimics. We hypothesised that despite their bright colouration, *O. ichneumon* avoid predation using ant-like shape and movement. We conducted experiments using an ant-averse, spider-eating predator (*Portia labiata*) and compared the probability and time to attack between *O. ichneumon*, a closely related typical jumping spider (*Cosmophasis umbratica*), and an ant (*Camponotus auriventris*) found in association with *O. ichneumon*. We found a gradient in the probability of attack, with the typical jumping spider attacked most frequently, followed by *O. ichneumon*, and the ant attacked least often. *Portia labiata* also took longer to decide whether to attack when presented with *O. ichneumon*, compared to the typical jumping spider or the ant. A comparison of outline shape using Fourier analysis also revealed that *O. ichneumon* resembles an ant when considered in reverse, but in normal orientation looks like a jumping spider. Our results suggest that imperfect ant mimicry confuses predators and allows *O. ichneumon* time to escape.