

Science reveals male widow spider's dastardly deeds

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Whenever the "widow" spider is mentioned, people tend to sympathise with the hapless male—best known for its tendency to end up as a post-coital snack.

Well, pity them no more.

Widow spider males have developed a rather gruesome method of saving their own skins, scientists revealed on Wednesday.

To avoid becoming the lunch of adult [females](#), some males have taken to inseminating juveniles which have no external genitalia yet—penetrating right through their exoskeletons to deposit sperm.

The females retain the sperm and produce offspring later, when they have matured.

Unlike mating with adults, this option "rarely ends in cannibalism" of the males, the research team wrote in the Royal Society Journal *Biology Letters*.

"This means that many males actually have the chance to mate more than once," study co-author Maydianne Andrade of the University of Toronto Scarborough told AFP—boosting their chances of reproductive success.

Andrade and a team were conducting unrelated research on two species in the "Latrodectus" or widow spider genus, when they observed the behaviour.

In both the Australian redback spider (*L. hasselti*), and the brown widow (*L. geometricus*), there is high competition among males for mating rights with females, which are several times larger than them.

Many males get to copulate only once in their life before being eaten—sometimes even during the encounter.



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Precision required

The researchers noticed that in the laboratory, and in nature, males mounted immature females whose genital organs and openings were still covered by a shell-like exoskeleton, which is shed before the creature reaches adulthood.

It appeared the males used their fangs to cut through the shell, then deposit their seed in the females' sperm receptacles, called

spermathecae.

"They manage to do this quite carefully, opening only this part of the shell, and as far as we can tell, without causing any injury to the female," said Andrade.

And they had to do it at just the right time—as soon as the genitalia and sperm storage organs are fully developed but not yet exposed—just a few days before the final moulting.

The males put much less effort into courting juveniles than [adult females](#), said the researchers—something that is usually done by drumming messages on the female's web.

The altered mating behaviour did not seem to affect the juvenile females' development or fertility.

The team said theirs was the first study to report successful insemination of immature female animals.

They discovered that as many as a third of widow spider females were being mated as juveniles.

"So even in this extreme system where females usually 'hold all the cards', males have evolved a way to shift the balance to favour their own [reproductive success](#)," said Andrade.

More information: Copulation with immature females increases male fitness in cannibalistic widow spiders, *Biology Letters*, rsbl.royalsocietypublishing.org/doi/10.1098/rsbl.2016.0516

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