

Orchid sexual deceit has male wasps in a loved-up frenzy

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Orchids are admired by humans and insects alike, but according to Macquarie University research, one Australian wasp is so enthralled by 'Orchid Fever' that actually he ejaculates while pollinating orchid flowers.

Australian Tongue orchids lure male insects with counterfeit sex signals that mimic those produced by female insects. Hapless male Orchid Dupe wasps (*Lissopimpla excelsa*) can't resist mating with the orchid flowers and accidentally become pollen couriers. Until recently, this trick was not thought to harm the reluctant insect Romeos, but biologists Anne Gaskett, Claire Winnick, and Marie Herberstein from Macquarie University, have discovered that the male wasps visiting Tongue orchids waste thousands of sperm on the flowers.

"If males waste all their sperm on orchids, what have they got to offer a real female?" asks Gaskett, a PhD student whose research paper on the study was published on Friday in *American Naturalist* (volume 171, June). "These pollinator species could suffer considerable reproductive costs if orchids inhibit mating opportunities."

To investigate this issue the researchers performed a worldwide survey of about 200 insects that are fooled into mating with orchids. Interestingly they found that more than 90 per cent of these duped pollinators were from species with a haplodiploid mating system. Extraordinarily, females from haplodiploid species such as wasps, bees and ants can actually produce offspring without sperm from males.

"Even without mating these females can still reproduce, however all the offspring will be male," says Gaskett. "These consequent extra male wasps could be important pollinators for orchids, and as long as some normal sexual reproduction still occurs, the cost of orchid deception can be mitigated."

"Despite the extreme demands they place on their pollinators, Tongue orchids are incredibly successful and have the highest pollination rate ever discovered in a sexually deceptive orchid. And while it's not widely known, Australian orchids are actually global leaders in sexual deception."

Source: Macquarie University

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