

Precopulatory oral sex found in darkling beetles

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Platyope mongolica mating and anatomic imaging of female's epigynum. (a) Oral sexual contacts between male and female. (b) Male–female copulation. (c) Epigynum from individuals without any oral sexual touches, in posterior view under anatomic imaging. (d) The epigynum from individuals after oral sexual contacts (dorsal view). Credit: DOI: 10.1002/ece3.6595

A team of researchers from China, the U.K. and the U.S. has found that a species of darkling beetles engage in oral sex prior to copulating. In their paper published in the journal *Ecology and Evolution*, the group describes their study of the beetles and what they learned about their mating habits.

As the researchers note, males giving [females](#) oral genital stimulation is rare in invertebrates. So they were surprised when they found male darkling desert beetles contacting and orally manipulating [female genitalia](#) multiple times prior to copulation.

The work by the researchers involved venturing to Mongolia to places where *Platyope mongolica* live—namely the region's deserts—to study their mating habits. The group collected multiple samples of both genders of the beetle during the [mating season](#) and brought them back to their lab for closer scrutiny than would be possible in the wild.

As the researchers watched, the females advertised their willingness to mate by pushing their abdominal terminus upward. Males responded by advancing to the female and then using their maxillary palpi (a sense organ located on the mouth) to stimulate the female's genitalia. As the males did so, the females generally stopped moving around to allow for easier access. During the oral stimulation, the females appeared to judge its effectiveness—if she was not satisfied, she would end things by lowering her rear end and walking away.

The researchers studied the oral stimulation routine in more detail by disabling different parts of the [males](#) or females (by taping antennae or putting Vaseline on the female's genitalia), hoping to learn more about how important it was to the mating process. They found that it was quite important—unsuccessful oral stimulation typically led to unsuccessful [mating](#) attempts. They also found that there was some wiggle room, so to speak. Males that limited their time providing oral stimulation but still

managed to keep the female from wandering away, tended to be less successful in their attempts at copulation. The researchers conclude that in addition to aiding copulation in a physical sense, oral copulation also serves as a test of sorts, allowing females to better judge who will produce superior offspring.

More information: Xinghu Qin et al, Precopulatory oral sex contact plays an important role in copulatory success in a cryptic desert beetle, *Ecology and Evolution* (2021). [DOI: 10.1002/ece3.6595](https://doi.org/10.1002/ece3.6595)

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