

A mating dance with Popeye arms

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Arms like Popeye: The male Siberian locust displays his swollen forelimbs when courting the female. Credit: Bielefeld University

A research team at Bielefeld University headed by the evolutionary biologist Dr. Holger Schielzeth is now studying how far a comparable mechanism is involved in mate choice among locusts. The male Siberian locust has swollen front legs. The scientists are now studying how far female locusts prefer the male with the most powerful swellings and select their mates accordingly.

In the [animal world](#), it is not always the strongest that prevails – sometimes, it is the most beautiful. A well-known example is the peacock. The peahen chooses the partner with the most attractive tail

fan. A research team at Bielefeld University headed by the [evolutionary biologist](#) Dr. Holger Schielzeth is now studying how far a comparable mechanism is involved in mate choice among [locusts](#). The male Siberian locust (*Gomphocerus sibiricus*) has swollen front [legs](#). The scientists are now studying how far female locusts prefer the male with the most powerful swellings and select their mates accordingly. The German Research Foundation is funding the project for five years as part of its Emmy Noether Programme.

Sexual ornaments are what zoologists call such prominent features that influence mate choice. One example is the swollen forelimbs of the Siberian locust (*Gomphocerus sibiricus*). Holger Schielzeth has called these ornaments 'Popeye arms' because of their resemblance to the cartoon sailor's muscular forearms. 'We suspect that this feature is decisive for the female's mate selection', he says. What's so special about such ornaments is that reproductive success does not depend necessarily on adaptation to the environment. At first, glance, it would seem as if such an ornament is even an end in itself.

Schielzeth and his team are experimenting with the locust in order to find out how important the condition of the Popeye arms is for female [mate choice](#). They are also analysing whether the condition of the Popeye arms is related to an animal's health. Are the forelimbs more swollen when the male is better nourished? However, the opposite perspective is being studied just as closely. Are well-nourished females choosier than those living in deficient environments?

The reason why the scientists are seeking answers to all these questions is that they want to understand the evolution of sexual [ornaments](#). 'Much of the variety that impresses us so much in nature relates to sexual ornaments', says Holger Schielzeth, 'hence, we are finally also interested in gaining a better understanding of the emergence of biodiversity'. Evolution cannot be understood without knowing about the genetics of

these features, Schielzeth says.

Provided by University of Bielefeld

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