

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

Summer 2019



UNIVERSITÄT
BAYREUTH

Thursday

16.05.2019

12:00 in H6, GEO

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He's giving me good vibrations: of the interesting mating behavior of mason bees

Differences in female preference for certain characteristics of males can be a driving force for population divergence and speciation. We show that in the red mason bee, *Osmia bicornis*, females choose suitable males based on, among other criteria, their vibrations.

As mason bees are very efficient pollinators and therefore being used increasingly in agriculture it is important to know how different populations interact and how separated they might already be. We investigated whether there is selective mate choice between *O. bicornis* individuals originating from different regions in Europe and whether the male's vibrations play a role in this. In order to investigate whether females do indeed use the males' vibrational signals for selective mate choice we experimentally changed the vibrations in a live male during mating. To achieve this we designed a new and innovative set-up using an inductor and small magnets.

Climate change and the resulting changes in air temperature are known to have a major influence on most animals, especially poikilothermic insects, because they depend on the high enough temperatures to function. Mason bees are some of the first bees to emerge in spring and are therefore subject to high temperature fluctuations. We investigated the impact of different temperatures on their complex mating behavior.

Our results give exciting new insights into the scope of vibrational communication in bees, a group previously thought to mostly rely on chemical signals for communication, and the impact our ever-raising temperatures could have on these important pollinators.