

Reproductive conflicts in ant colonies

Although one may have the impression that life in insect colonies, such as those of ants and bees, is harmonious, this is often not true. We often see cooperation in and outside of a colony, but we also see strong competition, which may be expressed either as crude physical attacks or as more subtle agonistic behavior. Competition is about reproduction, which is normally strictly regulated. In some ant species, conflicts become evident when workers selectively destruct eggs. Preferable eggs are cared for, non-preferred eggs are killed. We try to understand, how the workers can identify the preferable eggs. We demonstrated previously that egg discrimination is based on differences in the chemicals present on the surface of the eggs. However, colony conditions change which has an effect on the discrimination of eggs. We try to find out, how colony conditions can affect egg discrimination and how this fits to the theory of reproductive regulation in ant colonies.

The student will have the opportunity to take part in experimental approaches that focus on specific factors that affect egg discrimination. The student will conduct whole experiments under the supervision of a graduate student and the professor. This includes preparing nest boxes, selecting worker groups, setting up the experiment, and analyzing the results. We have more than 200 ant colonies in the lab which allows many experiments. Conducting the experiments requires accuracy and a sense for details. Applicants should have a biological background and a strong interest in animal behavior, ecology and/or evolution. The nature of the experiments requires a minimum time commitment of 10hours/week.

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