



## Pathogen-mediated sexual selection in ants

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Mate choice is critical for the fitness of sexually reproducing individuals. In particular, sexual selection often promotes finding a partner that does not harm one's own reproductive success and may convey disease resistance to the offspring. Therefore, sexual selection has received ample recognition outside the social insects, where mating on the wing typically promotes scramble competition and makes observations unfeasible. However, it can be studied in intranest mating species, where the presence of workers adds the additional opportunity of indirect sexual selection by worker interference. This is the case in the ant *Cardiocondyla obscurior*, where we find extensive male fighting over the access of virgin queens and workers engaging in male-killing. We use this model system to study how pathogen experience of all involved parties (the males, queens and workers) affects both male-male competition and potential female choice. We show that exposure to the obligate killing fungal pathogen *Metarhizium* affects not only the interactions between the reproductive individuals, but also how workers interfere in sexual selection. Hence, we can show that all parties of the ant colony interact in pathogen-mediated sexual selection to collectively shape the future generation of the reproductive entity of sexuals and sterile workers, i.e. the fitness of the superorganism.