OR176

Reduction of fecundity precedes onset of foraging in ants

Bartosz Walter

An age-independent division of labour is common in workers of many eusocial insects (ants, bees, wasps, termites), where individuals divide into nest-dwelling nurses and outside-nest working foragers. In addition, foragers exhibit ovarian atrophy or even lack of ability to lay male destined eggs when compared to highly fecund nurses. As the differences in ovary development are not strictly age dependent, it is not clear whether decreased fecundity precedes onset of foraging or is a consequence of foraging wear and tear. In the study, I examined fecundity (ovarian development and ability to lay male designed eggs) of nurses and same-age 'new' foragers, just after the onset of foraging in the ants *Temnothorax unifasciatus* and *Myrmica rubra*. I found that 'new' foragers had significantly reduced fecundity compared to nurses already at the onset of foraging, indicating that ovarian atrophy precedes the onset of the behaviour. The findings are consistent with the subfertility hypothesis, proposing that differences in fecundity potential between cooperatively breeding insects resulted in division of labour, and thus, were important for the origin and evolution of eusocial insects.