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Fighting experience makes beetles better mothers, study shows

Female beetles that are seasoned fighters put more effort into raising their offspring than mothers with no conflict experience, a study suggests.

Beetles that are used to conflict spend twice as much time providing food for their offspring as those that have never fought, helping more of their young to survive, researchers say.

Female burying beetles – which belong to the species *Nicrophorus vespilloides* – routinely fight over the carcasses of small birds and rodents, which they use to provide their young with food.

The University of Edinburgh study found that female beetles with conflict experience are better mothers, regardless of whether they won or lost in past fights. They laid the same number and size of eggs, but more of their offspring survived into adulthood, the team says.

Being involved in a fight indicates to female beetles that competition within the population is high, researchers say. Faced with a lot of competition from other beetles, each female may get to reproduce only once, so they put greater effort into each breeding attempt.

In any species where fighting occurs, experience of physical contests may influence mothers' reproductive decisions and alter the number and health of their offspring, the team says. Contests for food, mates and other resources are very common in mammals, birds, reptiles and fishes.

The study, published in the journal *The American Naturalist*, was funded by the University of Edinburgh and Campus Hungary. The research was carried out in collaboration with the University of Debrecen, Hungary.

Natalie Pilakouta, of the University of Edinburgh's School of Biological Sciences, who led the study, said: "Our findings show that fighting contests have much wider consequences than previously thought. We now know that fighting experience can affect parents' decisions about how much care to provide to their offspring."

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