

Pesky fruit flies learn from experienced females: Study

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Fruit flies. Credit: Ted Morrow

A common household nuisance, the fruit fly, is capable of intricate social learning much like that used by humans, according to new research from McMaster University.

The study, published online today in the journal [Proceedings of the Royal Society B](#), found that inexperienced female [fruit flies](#), known as *Drosophila melanogaster*, can learn from their more experienced counterparts, mated fruit flies.

As part of an ongoing examination of the evolutionary roots of [social learning](#) in insects, researchers found that when the novices landed on

decaying fruit where the mated females had laid their eggs, the novices later preferred to lay their eggs in the same place rather than seek out other ripe fruit.

"For humans, our entire culture is based on social learning so it is very natural for us to gain valuable knowledge from one another, but most animals are completely on their own," explains Reuven Dukas, associate professor in the Department of Psychology, Neuroscience and Behaviour, who co-authored the study along with graduate student Sachin Sarin.

This research suggests that even solitary insects can exhibit social learning, which raises the possibility that learning from each other has promoted the evolution of socializing among insects as a survival mechanism.

Researchers found no social learning, however, when the observer females were exposed to food with more ambiguous social information provided by the presence of virgin fruit flies. Similarly, the presence of an aggregation pheromone—a pheromone derived from male fruit flies which attracts both sexes—had no influence.

"The fruit fly is much more sophisticated than many people think or really want to believe," explains Dukas. "It shares many of the same genes and the same compounds that control learning in humans. This first documentation of social learning in fruit flies opens up exciting avenues for research on the evolution and neurogenetics of social learning."

Source: McMaster University

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