

The newly conducted study introduces a fruit fly's version "Take Me Out", telling the value of sexiness in reproduction. (120)

### **Sexiness matters in mating (26)**

*Drosophila melanogaster*, namely fruit fly, tends to mate with their counterparts with similar fitness, demonstrating that the mating pattern is *assortative* (non-random), says a Canadian study.

The study tests the non-random mating for fitness in flies through a large number of trials in different cases.

Sexual selection in forms of male-male-fight and female choice is shown in experiment, which leads to high productivity of flies with high fitness, states Professor Nathaniel Sharp from University of Toronto.

The results support the existence of *assortative* mating in reproduction. (86)

### **Mating of fruit flies is determined by "sexiness"**

The natural selection was thought as a random event in an ideal condition. However, sometimes we notice that some males mate more in reality. Like many others would ask, Professor Nathaniel Sharp from University of Toronto posed the question: "For a given male fruit fly, say it is the sexiest guy, but does it mean he mates with any female he meets with equal probability, or he only mates with females that are also sexiest?"

According to a recent study conducted by University of Toronto, *Drosophila melanogaster*, the so-called "fruit fly", tends to mate with counterparts in matching fitness, which shows an *assortative mating* pattern. To be specific, male fruit fly in high condition referring to high fitness is more likely to mate more with female in high condition, *vice versa*, as expected.

The study contains a large number of one-hour mating trials, operated with one virgin female and two virgin males. Researchers use diet manipulation on larvas to diverse the fitness of flies. "The reason we are particularly interested in assortative in fitness is because it has important effects on populations." explained by Professor Sharp.

As predicted, *assortative mating* does happen in the trials. Figures show the mating rate between high condition male and low condition female is 56.4%, while, the mating rate between high condition male and high condition female is 65.9%, comparatively higher. “Our male fruit fly is still the most successful and sexiest one, but he is now targeting directly to a certain kind of female now.” said Professor Sharp.

The result also finds that high condition males are more successful in mating generally, and greatest advantage takes place with high condition females.

So what kind of effect does *assortative mating* have in reality? Professor Sharp added that *assortative mating* is expected to increase species’ variability in fitness among offspring by accelerating their adaptation to changing environments, “If mating is random, the offspring would tend to have intermediate fitness, mix of both good and bad quality genes. But if mating is non-random, genes tend to be really good or really bad. So it is easy to get rid of the bad stuffs.” Moreover, it reduces the risk of extinction in small population.

The assistant professor George Zhou, from Fudan University in China, however, doubts that the result of this study might be misleading or even false if operated with a different sample size in real world.

(400)