Natural Selection At Work

Thursday November 1, 2018

Natural Selection refers to the process by which favorable survival traits are propagated within a species.

> (Natural Selection is) the process by which forms of life having traits that better enable them to adapt to specific environmental pressures, as predators, changes in climate, or competition for food or mates, will tend to survive and reproduce in greater numbers than others of their kind, thus ensuring the perpetuation of those favorable traits in succeeding generations.
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> “Natural Selection.” Dictionary.com, Dictionary.com, www.dictionary.com/browse/natural-selection.

It is a key mechanism of evolution, the change in the heritable traits characteristic of a population over generations.

The Peppered Moth

The peppered moth is probably the most well-known example of natural selection.

This moth lives throughout North America and Eurasia. As a species, it relies on camouflage for survival. The caterpillars closely resemble twigs, and the adult moths, some black and some white, blend into their surroundings.

Whenever a species relies on this strategy for survival, however, they are vulnerable when the world around them changes.

In England, before the industrial revolution, white moths dominated, as they were well adapted to blend into the bark of white birch trees. Throughout the industrial revolution, people noticed that the black moths began to dominate, while the white moths became much rarer.

Bernard Kettlewell, a research fellow at the University of Oxford, conducted a series of experiments and eventually determined that the darkening of surfaces caused by industrial pollution meant that the black moths were better camouflaged, giving them a survival advantage.

Black Squirrels

There’s also a fine example of natural selection quite close to me.

There’s a small population of black squirrels near Jamestown, Ohio. They are a variety of grey or fox squirrels that have a genetic condition called melanism.

While quite rare now, there was a time when they were the predominant squirrel in the northern United States. It is surmised that this is because their black coloring provides better camouflage in heavily forested areas. As forests were cleared, this camouflage was less effective, and so their

populations dwindled. Some areas with reforestation efforts are seeing a resurgence of these squirrels.

What Can You Find?

The next time you're outside, look around. Can you find examples of animals well adapted for survival?

You may also find animals comically *maladjusted* for survival. Domesticated dogs and cats, I'm looking at you!

Sources

Feeney, William. "Natural Selection in Black and White: How Industrial Pollution Changed Moths." The Conversation, 18 Sept. 2018, http://theconversation.com/natural-selection-in-black-and-white-how-industrial-pollution-changed-moths-43061.

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