Natural Selection

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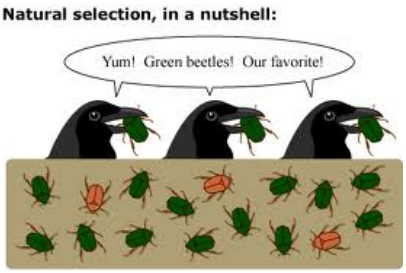
What is Natural selection?



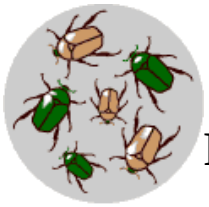
Natural selection is the concept developed by Charles Darwin. Natural selection is where the organisms and species survive and reproduce and pass it to the next generation of living things. The organism which fails to survive will die and therefore will not pass on its genes to the next generation.

Definition:

The organisms and species that survive and reproduce are the sole ancestors to the next generation of living things. Those that die or fail to reproduce will not continue.

How nature selects the organism?

Living in nature is hard. There is competition for food and other resources as well as for mates. Many animals die before they every get to reproduce, and not all those that survive will be successful in finding a mate as even in that there is great competition. Think about male lions or mountain goats fighting for the right to breed with a female. The genes of the survivors are passed on to the next generation if they mate successfully; if they don't survive or find a mate they never pass on their genes. Sometimes, changes in the environment or other causes can cause all the members of a species to struggle, and sometimes whole species fail to survive. The phenotype acts on natural selection as it has got all characteristics of organisms which inherit to a particular population.
As the time passes, a population for particular ecological niches gives rise to new species. In artificial selection, traits of certain variations only pass to the offspring. For example, the peppered moth was in two colors light and dark in United Kingdom, during the industrial revolution as a result of it the tress becomes darker due to soot as a result darker mother survived from predators. This gave dark-colored moths a better chance of surviving to produce dark-colored offspring and in just a few generations and they were in majority. This idea was by Charles Darwin on sexual selection.



Population of beetles

Some beetles are green and some are brown

Differential reproduction:

Green beetles tend to get eaten by birds and survive to reproduce less often than brown beetles do.

The surviving brown beetles have brown baby beetles because this trait has a genetic basis.

If this process continues, eventually, all individuals in the population will be brown.

Factors Influencing Natural Selection

Mutation

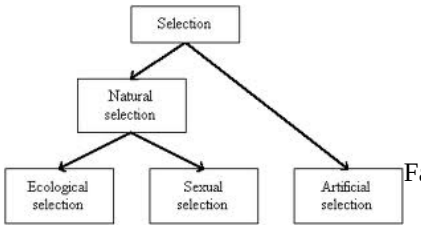
Natural selection is dependent on the existence of **mutations** in the genes coding for different characteristics of an organism. Most mutations in DNA are spontaneous and random, sometimes caused by passing cosmic rays or other exposure to radiation. Mutations may also be caused by errors in the formation of the genes in the parents' gametes in sexual organisms

Sexual selection

It is a "special case" of natural selection. Sexual selection acts on an organism's ability to obtain a mate (often by any means

necessary!) or successfully copulate with a mate.

Artificial selection



Farmers and breeders allowed only the plants and animals with desirable characteristics to reproduce, causing the evolution of farm stock. Common vegetables were cultivated from forms of wild varieties.
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Reference Links:

- http://en.wikipedia.org/wiki/Evolution
- http://en.wikipedia.org/wiki/Adaptation
- http://en.wikipedia.org/wiki/Genetic_drift
- http://en.wikipedia.org/wiki/Evidence_of_common_descent
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