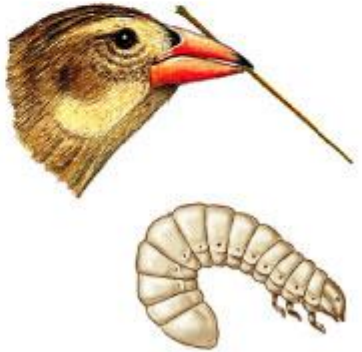
Chapter 16.3: The Process of speciation

Natural Selection

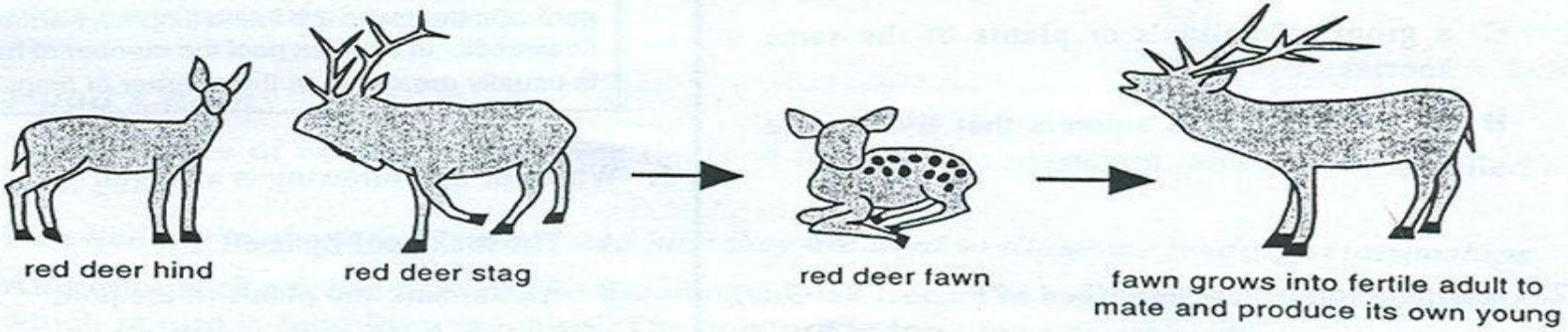
Genetic Drift

Speciation:
the formation of new species

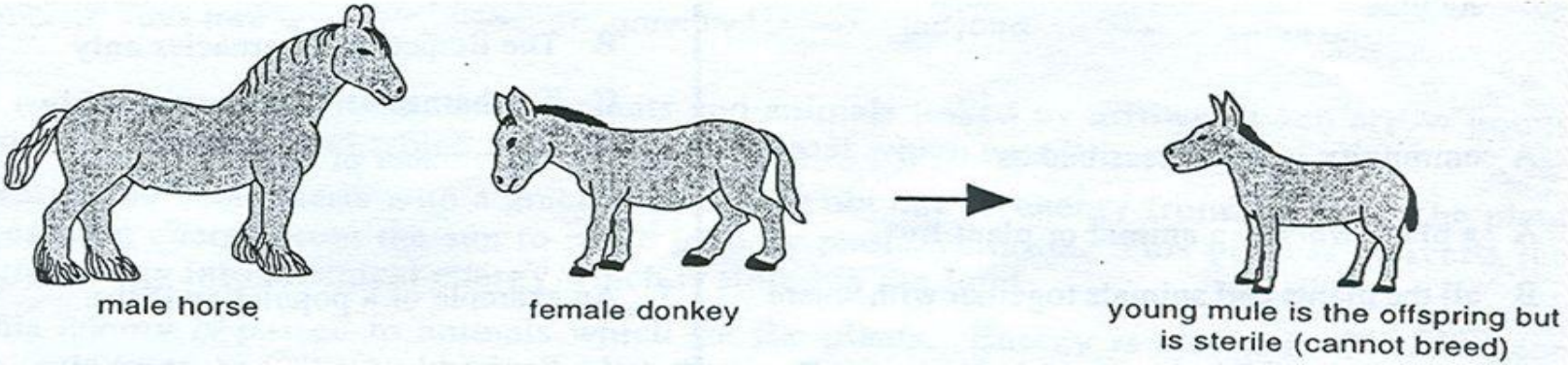


Species are defined as a group of organisms which produce fertile offspring.

Animals belonging to the same species can interbreed to produce fertile offspring



Animals that do not belong to the same species produce infertile offspring

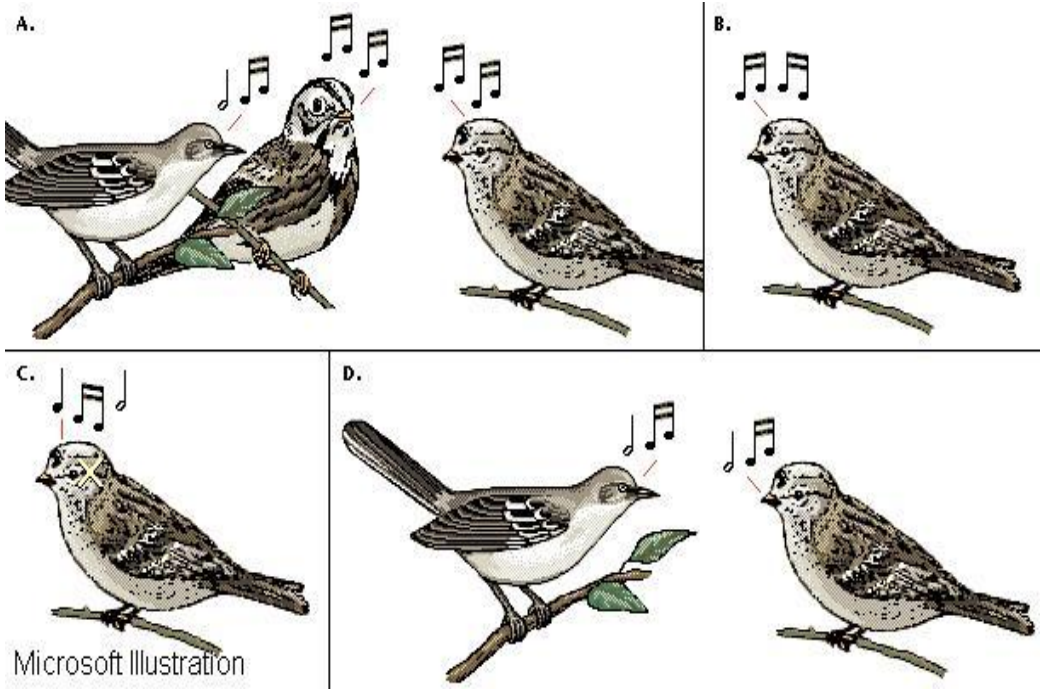


New species can emerge from several circumstances:

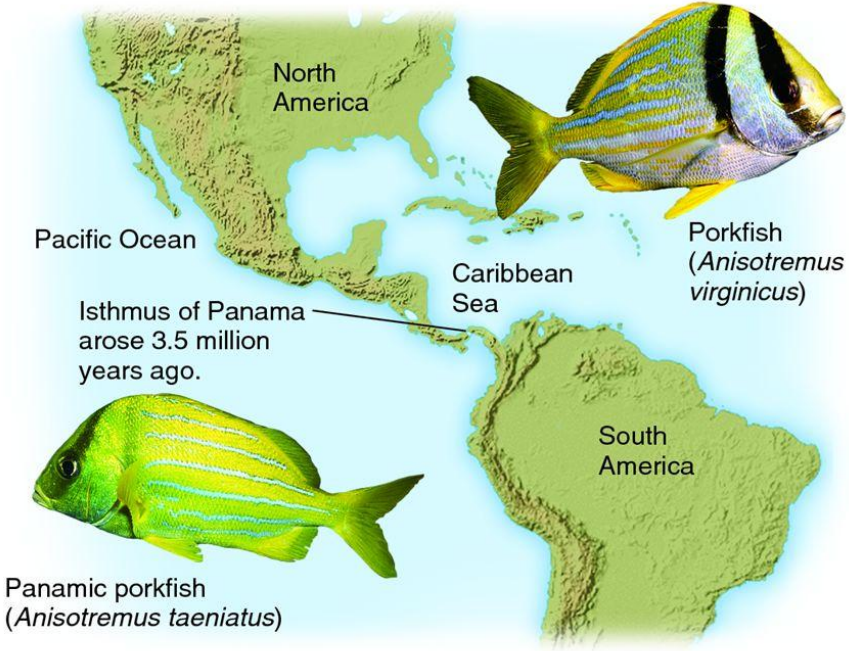
Reproductive isolation: when two population can no longer interbreed and produce fertile offspring.

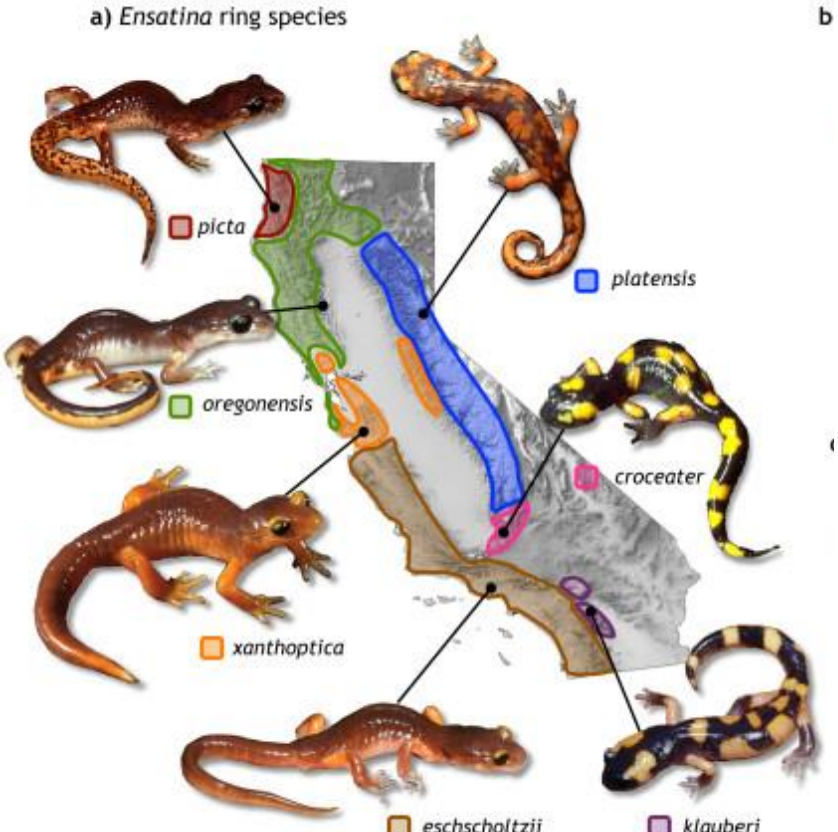
Natural selection and genetic drift continue to affect the separate species.

Behavioral isolation: when two populations are capable of interbreeding but have differences in courtship behavior or other reproductive strategies



Geographic isolation: two populations of a species are separated by geographic barriers and evolve to become separate species.





Temporal isolation: two or more species evolve to reproduce at different times.

Testing Natural selection in Nature

So, was Darwin right??

These two biologists, Peter & Mary Grant, decided to test Darwin's hypotheses.

The Beak of the Finch