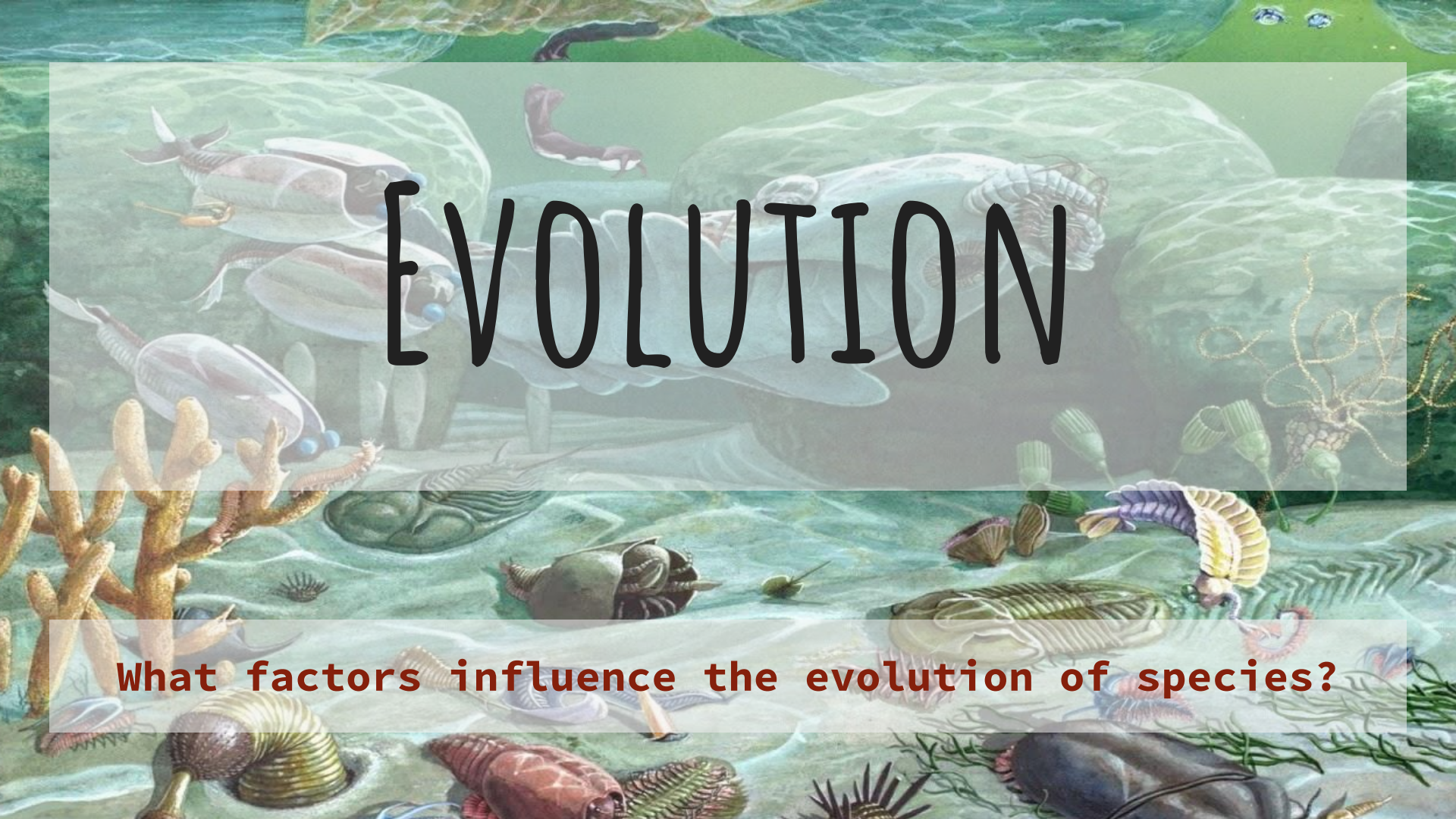


Evolution

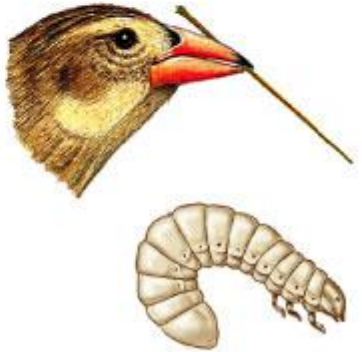
What factors influence the evolution of species?

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.

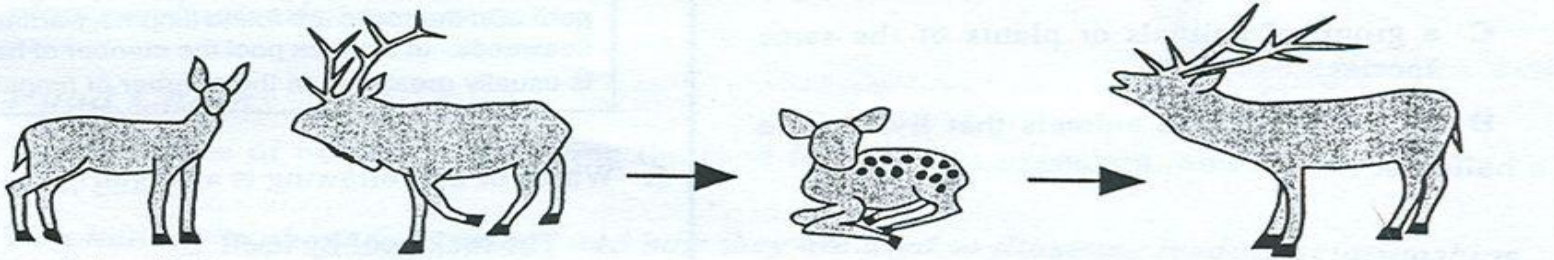
Mechanisms for speciation

In order for new species to emerge, gene pools of two populations need to be separated or *isolated* from each other

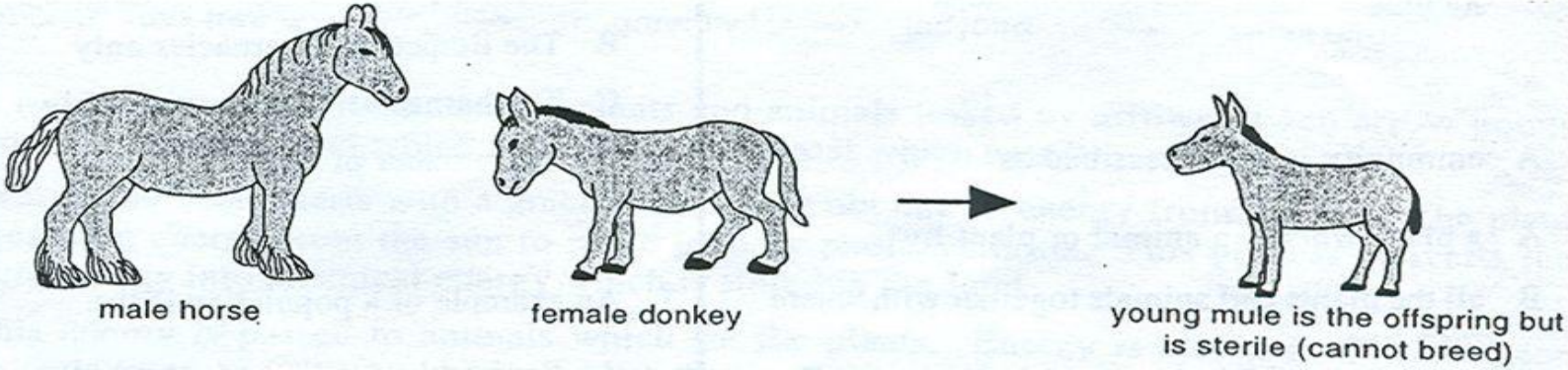
Reproductive isolation: when two population can no longer interbreed and produce fertile offspring.

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

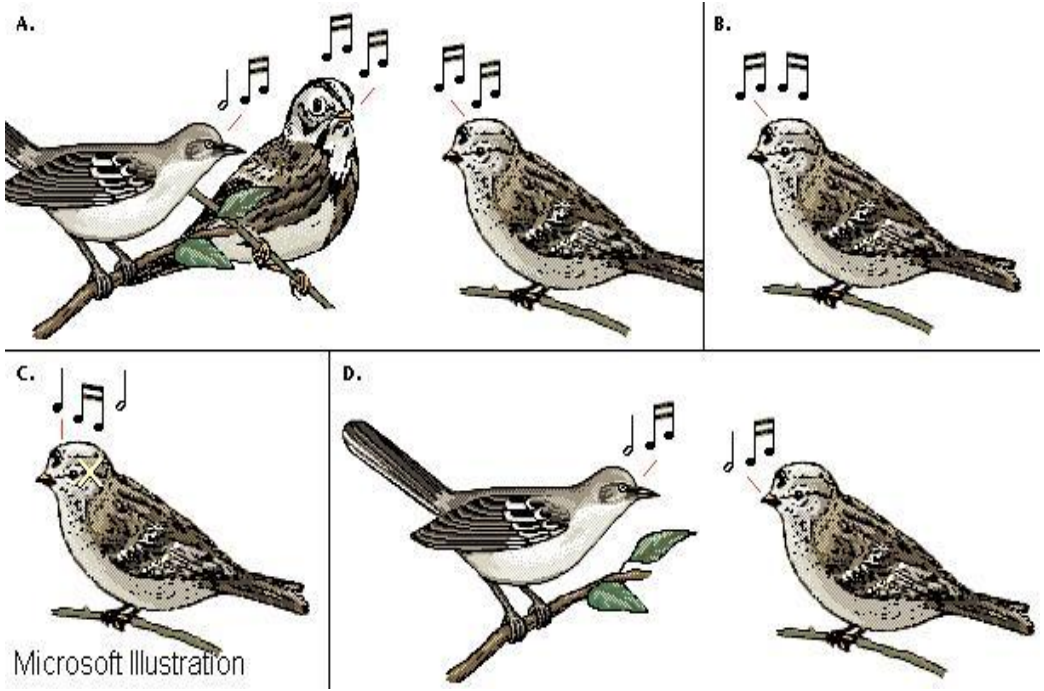
Animals belonging to the same species can interbreed to produce **fertile offspring**



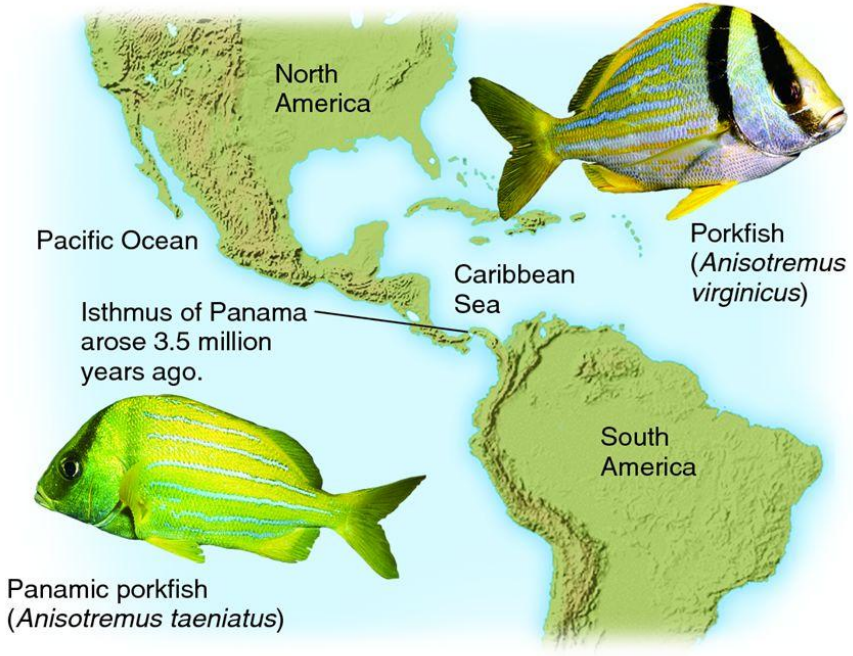
Animals that **do not** belong to the same species produce **infertile offspring**

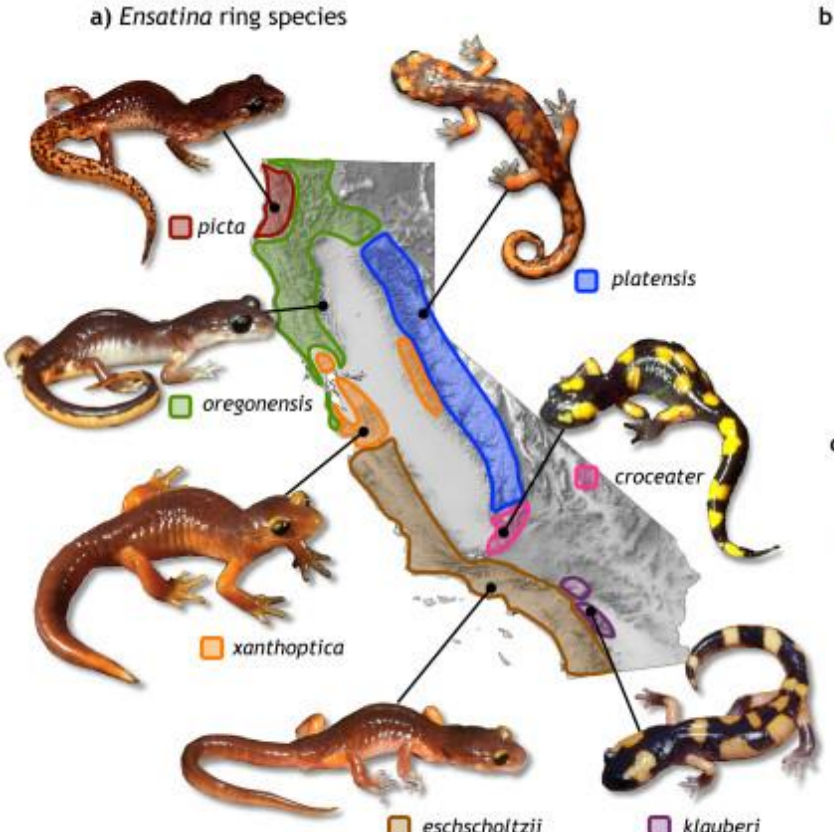


Behavioral isolation: when two populations are capable of interbreeding but have differences in courtship behavior or other reproductive strategies

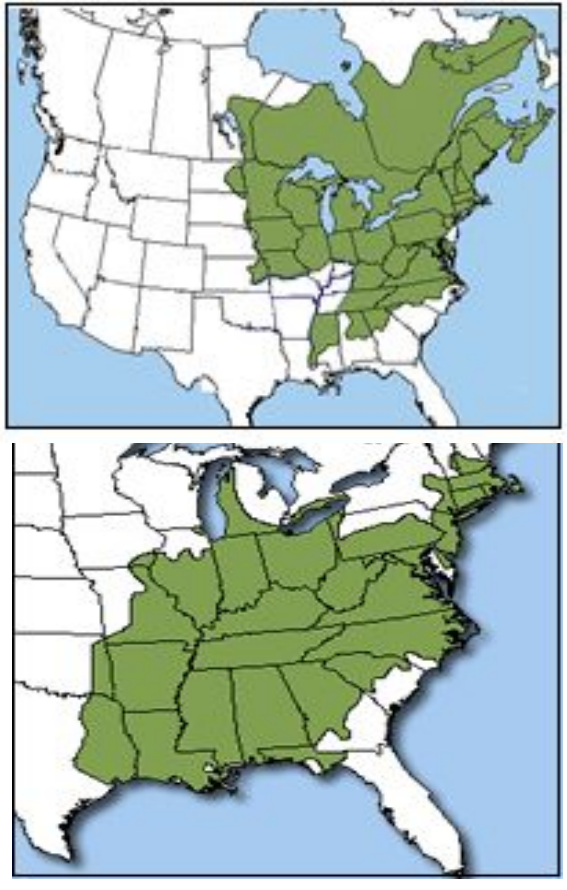


Geographic isolation: two populations of a species are separated by geographic barriers and evolve to become separate species.





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.

https://youtu.be/mcM23M-CCog