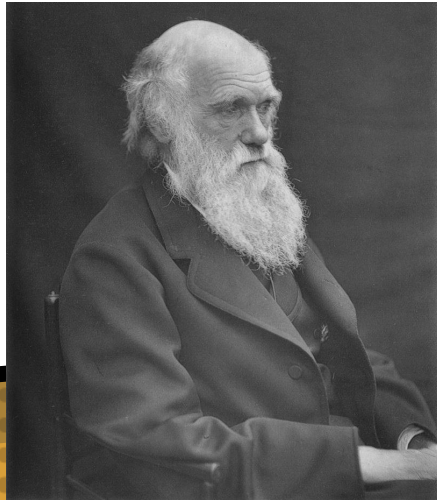


THE THEORY OF EVOLUTION



THE PUZZLE OF LIFE'S DIVERSITY

What is evolution??

- Change in a population over time.

What is a theory?

- Well-supported testable explanation of phenomena that have occurred in the natural world.

LAMARCK'S HYPOTHESIS

- Among the first scientists to understand that that things change over time.
- Proposed that by selective use or disuse of organs, **organisms acquired or lost certain traits during their lifetime.**
- Thus over time, leading to **a change in a species.**

DARWIN'S HYPOTHESIS

- Darwin proposed that all species or organisms arise and develop through a process called **natural selection**.
- Natural Selection is when an organism that is best adapted to their environment tends to survive and reproduce. Thus passing on their traits to their offspring while the less adapted tend to be eliminated.

DARWIN'S OBSERVATIONS

- Darwin made numerous observations and collected evidence that led him to propose the Theory of Evolution
- He observed that plants and animals (tortoises, finches, and iguanas) varied noticeably among the different islands of the Galapagos.

Lamarck

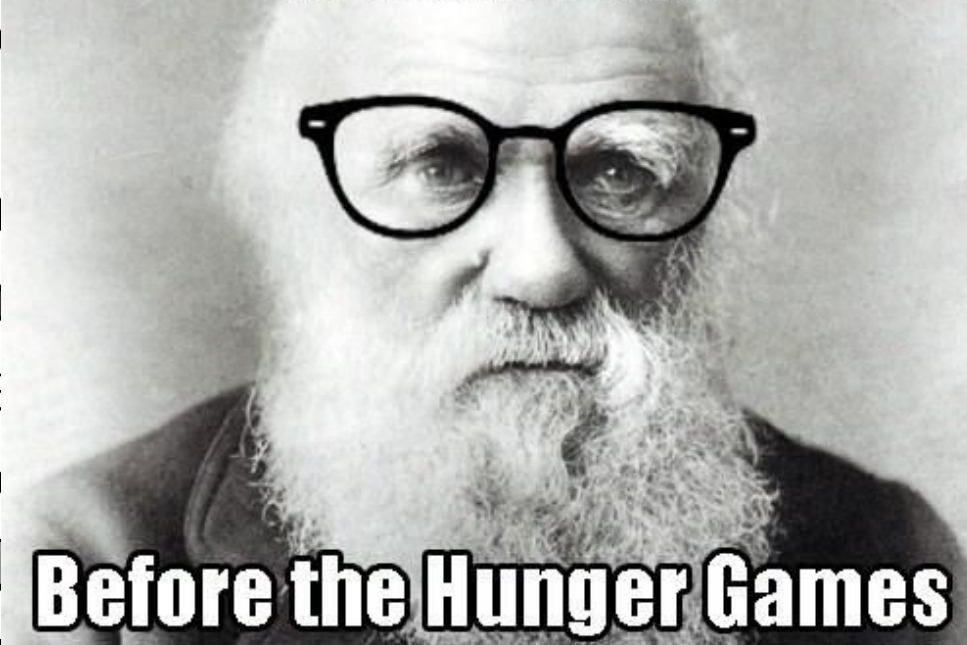


Darwin



**I talked about the survival
of the fittest**

- Darwin
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and I



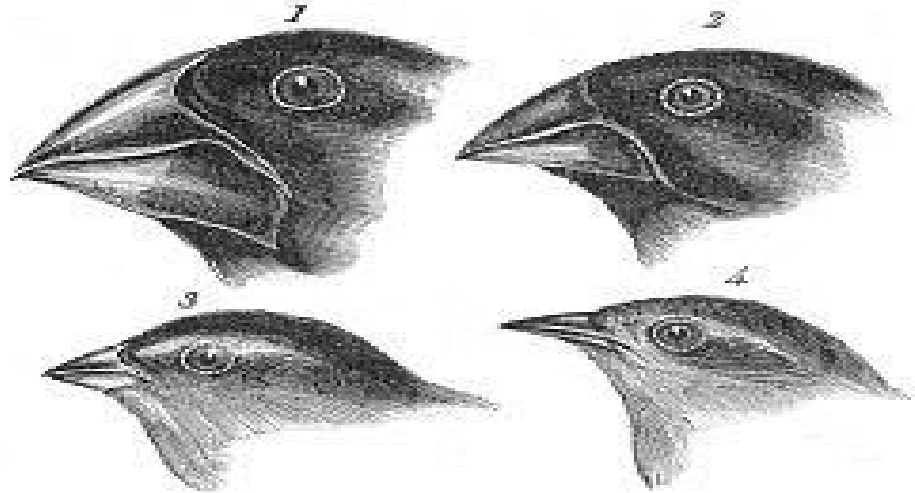
Before the Hunger Games

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***THEORY OF EVOLUTION AND
THE MECHANISMS THAT
SUPPORT IT...***



WHAT IS VARIATION?



Differences in traits

NATURAL SELECTION...

- Natural Selection states that nature **blindly** selects inherited characteristics of a population.
- These characteristics will then help the **most fit** organisms **survive** and **reproduce** in their environment.



Are all these
infant birds
EXACTLY the
same?
Will they have the
EXACT same
survival rate?

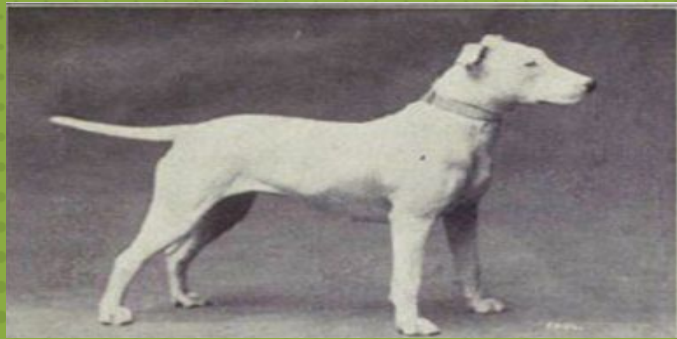


NO! The most
“fit” birds will
survive and
reproduce.

ARTIFICIAL SELECTION

- Nature provides the variation, but humans select the variations that they find useful.
- Examples:
 - A&M used artificial selection to create a maroon carrot!!
 - Breeders artificial select traits for dogs.



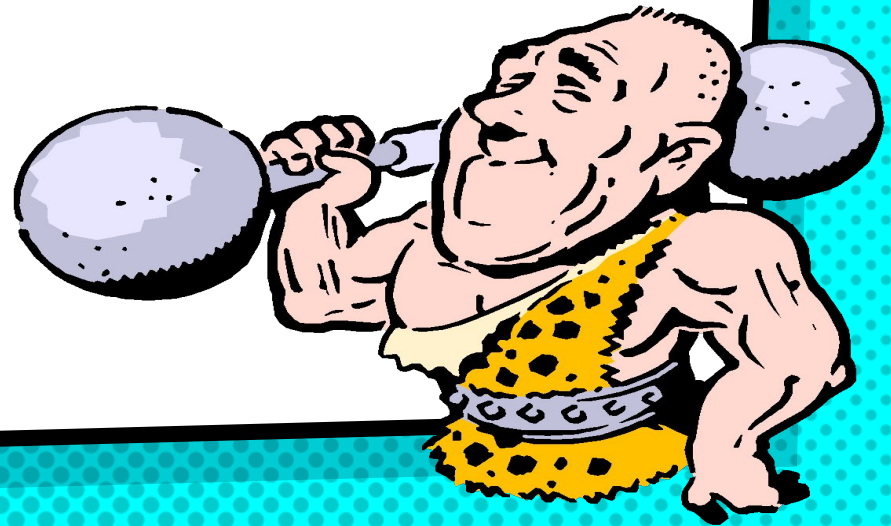


WHAT DOES IT MEAN BY SURVIVAL OF THE FITTEST?

What is “Fitness” ?



**I BE UP IN THE GYM
JUST WORKING ON MY FITNESS**



FITNESS

The ability of an individual to **survive and reproduce,** which allows the individual to pass on its traits to the next generation.

Which Lion is more Fit?



I lived for 12 years and fathered 2 cubs.

I lived for 5 years and fathered 8 cubs.

I lived for 12 years and fathered no cubs.



2

ME!

I was better **adapted** to my environment than my brothers were!!

***SO HOW DO ORGANISMS SURVIVE AND
REPRODUCE?***

By Adaptations

ADAPTATION!

A specific structure or behavior that helps an organism **survive** **and reproduce** in a particular environment



**Peregrine
Falcon**



**Brown
Pelican**



Polar bear



Kiwa hirsuta



Star-nosed mole



Aye Aye

What are their
adaptations?

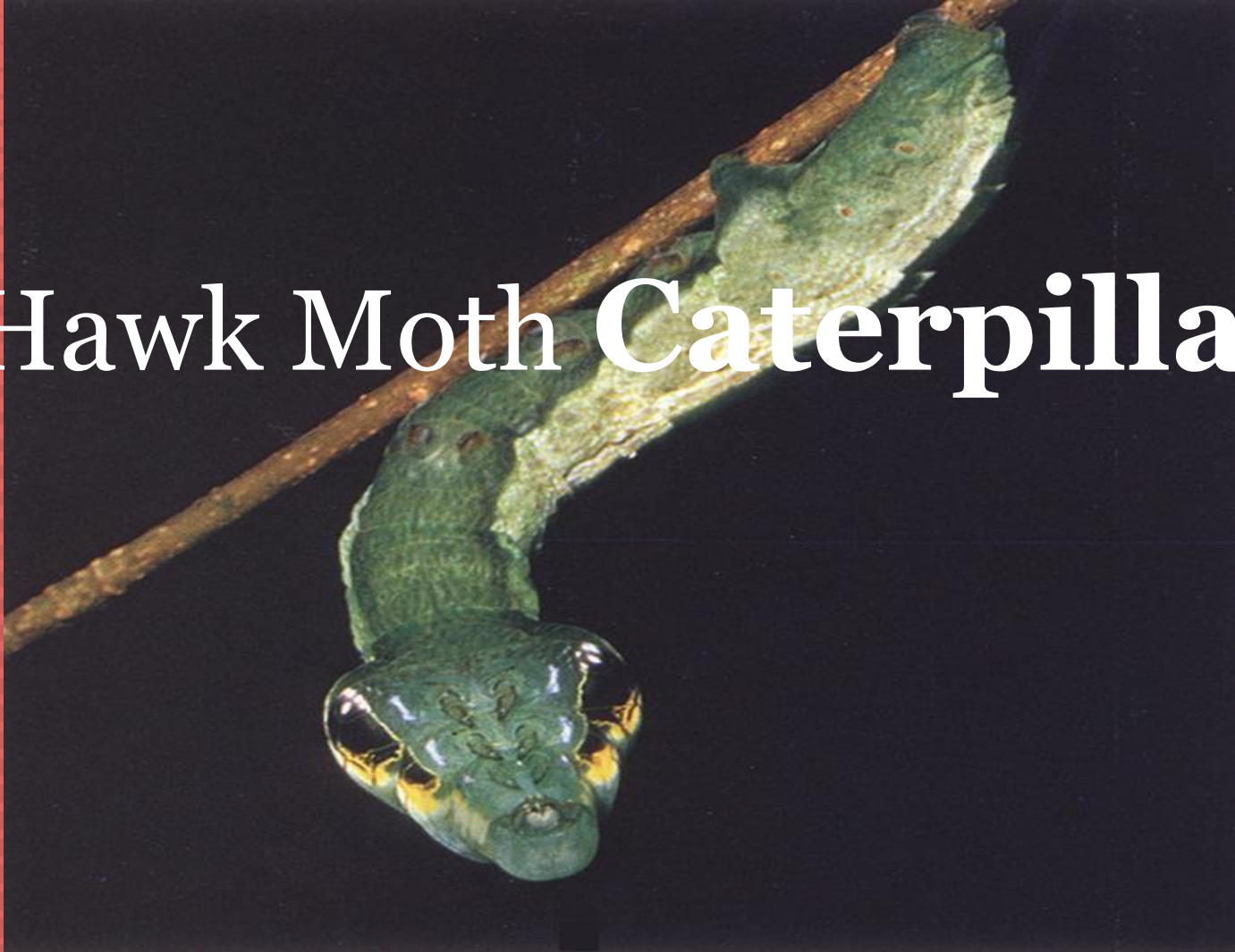


TYPES OF ADAPTATIONS!!

- Mimicry- imitating something/someone else to increase one's chance of survival



Hawk Moth Caterpillar





Scarlet King Snake

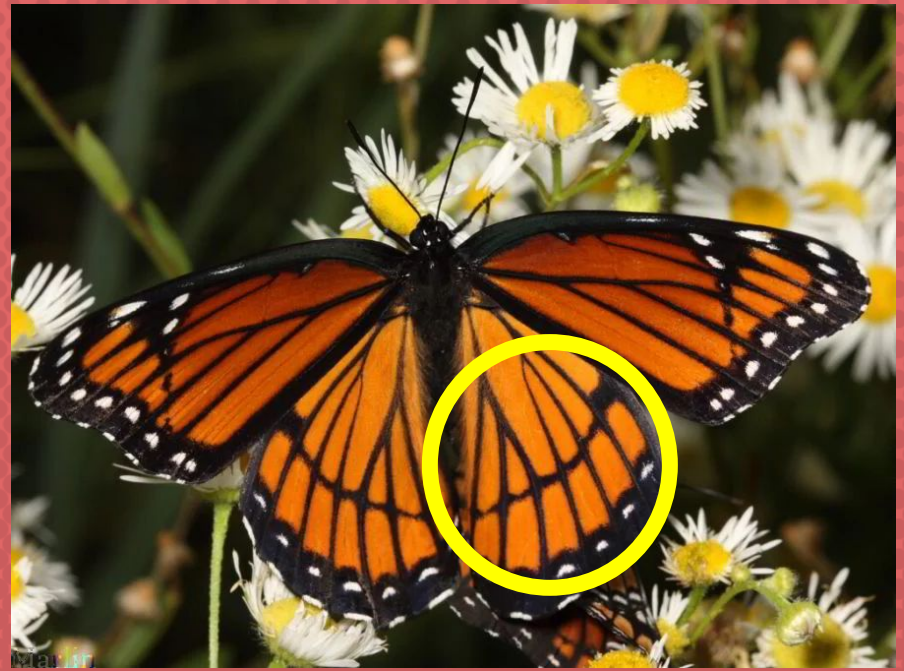


Coral Snake

"Red on yellow, kill a fellow. Red on black, won't hurt Jack."



← Monarch



Viceroy →



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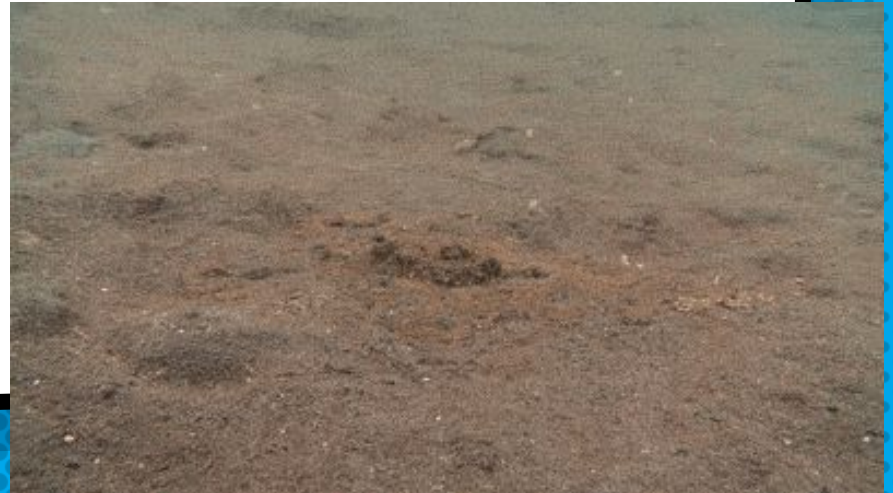


Lutinus Beetle



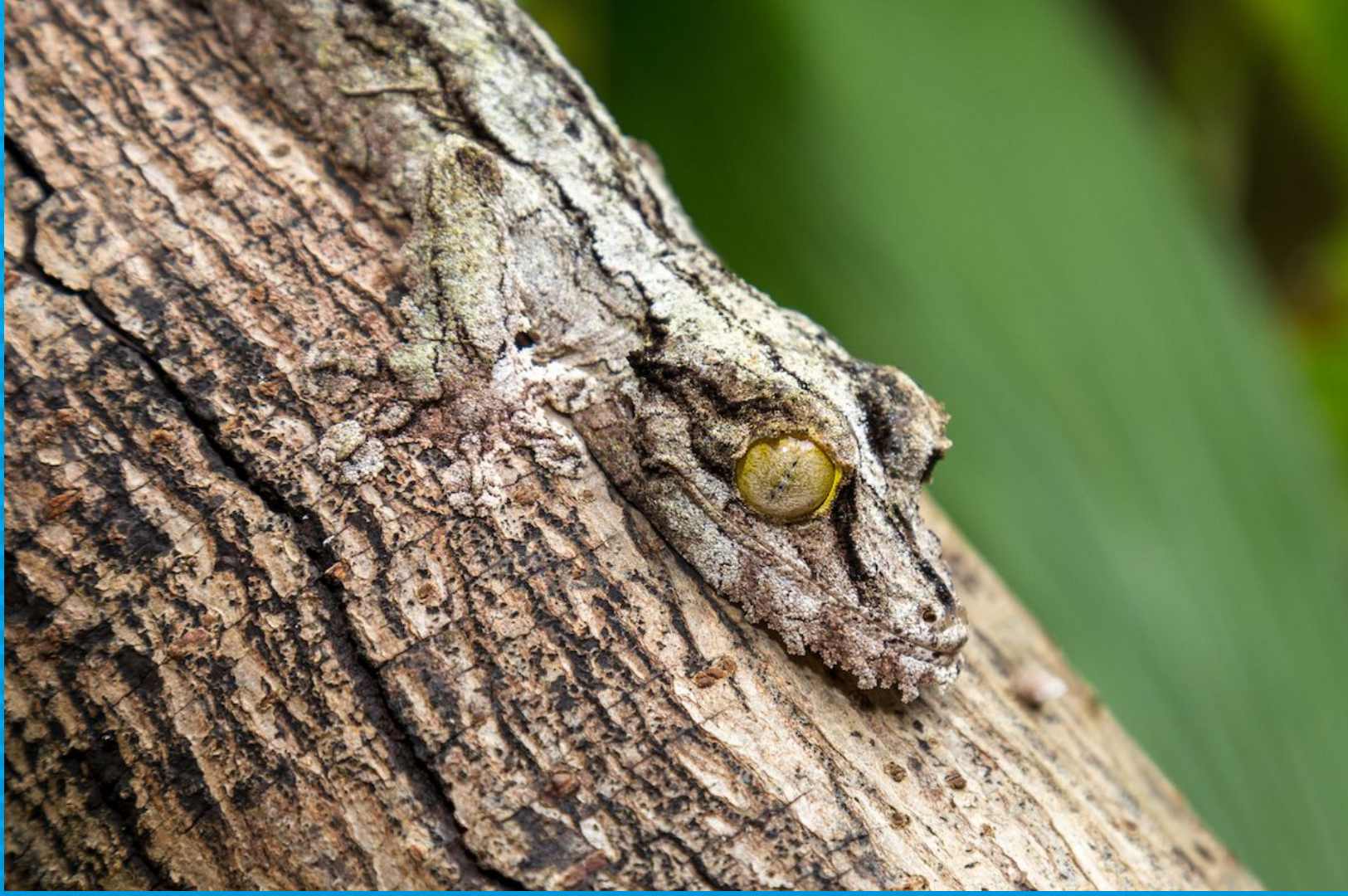
TYPES OF ADAPTATIONS!!

- Camouflage- the ability to hide or blend in with one's environment.













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