

## Biology Chapter 15-18 Notes

### 15-3 Darwin Presents His Case

- A. Publication of On the Origin of Species
- B. Inherited Variation and Artificial Selection
- C. Evolution by Natural Selection
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  - 2. Survival of the Fittest
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- D. Evidence of Evolution
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- E. Summary of Darwin's Theory
- F. Evolutionary Theory Since Darwin

#### Publication of On the Origin of Species

- Darwin spent 5 years as the naturalist on The Beagle.
- When he returned to England he did not publish for over 25 years.
- Another naturalist gave Darwin the push to publish. His name was Alfred Russel Wallace.
- Darwin's book contained evidence for evolution and it described natural selection.

#### Inherited Variation and Artificial Selection

- Differences among individuals of a species are referred to as variation.
- Genetic variation is found among all species, whether domestic or wild.
- We use variation in artificial selection. It is selection by humans for breeding of useful traits from the natural variation among different organisms. It is also called selective breeding and produces organisms that look very different from their ancestors.

#### Evolution by Natural Selection

- Darwin's greatest contribution was developing a scientific hypothesis to explain how evolution occurs.
- He came up with several terms:
  - 1. Fitness- the ability of an individual to survive and reproduce in its specific environment.
  - 2. Adaptation- any inherited characteristic that increases an organism's chance of survival.
  - 3. Natural selection- survival of the fittest.