

Population Genetics and Speciation

Chapter Sixteen

- What is Population Genetics?

- Population genetics is the study of evolution from a genetic point of view.
- Populations are important to the study of evolution because a population is the smallest unit in which evolution can occur
- Variation of traits within a population tend to form a bell curve when depicted on a graph

- Hardy-Weinberg Principle

- The gene pool describes the total genetic information available in a population
- The Hardy-Weinberg Principle states that the frequency of alleles in a population does not change over generations unless outside forces act on the population

- Mechanisms of Evolution

- Selection
 - Natural Selection
 - Artificial Selection
- Genetic Drift
- Mutation
- Gene Flow
- Nonrandom Mating

- Types of Natural Selection

- Stabilizing selection is when individuals with the average form of a trait have the highest fitness
- Disruptive selection is when individuals with either extreme variation of a trait have greater fitness than individuals with the average form of a trait
- Directional selection is when individuals that display a more extreme form of a trait have greater fitness than individuals with an average form of the trait

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