

## Chapter 24 - The Origin of Species

- **Biological Species Concept** - Ernst Mayr, 1942 - Species are groups of actually/potentially interbreeding populations that produce fertile offspring and are reproductively isolated from other such groups
  - o **The biological species concept is based on infertility, not physical similarity**
- **Cladogenesis** - the formation of new species by branching of the evolutionary tree. It forms a clade.
- **Clade** - a group of species that includes their ancestor and all descent species.
- **Allopatric Speciation** - Geographic Barriers
- **Sympatric Speciation** - NO Geographic Barriers (common in plants)
- **Hybrid** - offspring from genetically dissimilar parents
- **Polyploid (Polyploidy)** - 2+ chromosome sets
- **Allopolyploidy** - 2 parents
- **Autopolyploidy** - 1 parent (Plants. It can occur in some insects (like aphids) and some fish, etc.)
- *Hugo deVries* - early 1900s - *Created 2 different types of primrose*
- **Endemic** - occurs only in ONE area
  - o **Old & Isolated place = Lots of endemic species**
    - Example: Cichlid fish in Lake Victoria in Africa
- Two Models for the tempo of speciation:
  - o **Punctuated Pattern** - most rapid change as new species branch from an ancestor
  - o **Gradual Pattern** - Species diverge gradually from one species to another
- **Animals with complex behavior speciate FASTER** (Mating dances, for example, in Birds of Paradise)