GENERAL BIOLOGY Lecture 36 - Community Interactions

I. Definitions
- A. Habitat - place where a population lives
- B. Niche - full range of abiotic and biotic conditions under which a species can live and reproduce
- C. Carrying capacity - equilibrium size at which a particular environment will stabilize when resources remain constant

II. Categories of community interactions
- A. Neutral - most interactions are neutral; neither species directly affects the other
- B. Commensalism - one species benefits and nothing happens to the other species
- C. Mutualism - both species benefit (can be long-term [symbiotic])
  - 1. Facultative mutualism - organisms can live without each other
  - 2. Obligate mutualism - organisms must have each other to survive (moth & cactus)
- D. Interspecific competition - both species harmed by the interaction
  - 1. Exploitation (efficiency)
    - a) Competitive exclusion (eat until the other starves)
  - 2. Interference (control of access)
- E. Predation and parasitism - one species benefits while the other suffers
  - 1. Predation can keep a population "in check"
    - a) Prey defenses - coevolution
    - b) Camouflage
    - c) Moment-of-truth defenses
    - d) Warning coloration and mimicry
  - 2. True parasites vs. parasitoids
    - a) Parasites usually do not kill, parasitoids usually do

III. Community organization, development, and diversity
- A. Succession - directional change in the community structure of an ecosystem over time
  - 1. Primary succession - ecosystem is forged from bare rock, sand, or glacial pool
    - a) Lichens, moss, larger plants, woody shrubs, forest
  - 2. Secondary ecosystem - from abandoned field
    - a) Weeds, perennial, woody shrubs, forest
  - 3. Climax community - the stable community
  - 4. Sub-climax community - maintained community (agriculture)