

Bio. 3302 Introduction to Evolution
Study Guide
Adaptive Traits

Important terms and Concepts

Adaptation
Adaptive trait
Commensalism
Competition
Evolutionary arms race
Exaptations (preadaptation)
Herbivory
Liebig's Law of the Minimum
Mutualism
N-Dimensional Hypervolume
Niche
Niche Overlap
Niche Partitioning
Niche Shift
Niche Width (Breadth)
Parasitism
Predation
Red Queen Hypothesis
Sexual Selection
Shelford's Law of Tolerance

Discussion Questions

1. What is an adaptive trait in an evolutionary sense? How are they generated?
2. Are all characters adaptations? What is the role of chance in evolution?
3. Some people believe that most traits are perfectly adapted. Why are some traits less than perfectly adapted? Some traits have no apparent adaptive function, can you name some?
4. What general steps would you take to try to demonstrate that a trait has adaptive value (in terms of reproductive fitness)?
5. What is an exaptation (preadaptation)? Give an example or two.
6. What is the relevance of the Red Queen Hypothesis to interactions between predators and prey, parasites and host, and between herbivores and plants?
7. What is a mutualistic relationship? How might they arise, and what keeps the system running smoothly? Give several examples.
8. What is a species' ecological niche? Describe four variants of how niches are described.
9. List five ways in which species interact. Describe each in terms of who benefits and who loses. Give examples for each and what kind of adaptations are involved.