

Topic 05 – Intro to Cladistic Analysis

I. Overview

- A. Scope
 - 1. Ingroup vs. outgroup
- B. Phylogenetic evidence
 - 1. Morphological characters
 - 2. Molecular characters
 - 3. Primary homology assessment
 - 4. Data matrix construction
- C. Recognizing synapomorphies to resolve cladogram
 - 1. Use of the OG method
 - 2. Use of parsimony

II. Cladogram Construction

- A. Choose the best cladogram
 - 1. Start with all possible topologies
 - 2. Use parsimony to optimize characters
 - 3. Choose cladogram with fewest steps
- B. The size of the problem
 - 1. Number of stars in the universe
 - 2. Number of possible trees
- C. Major programs for parsimony-based phylogenetic analysis