

INTRODUCTION

Molecular characters and evolutionary analysis

Evolutionary analysis

What kind of information is sought

- Phylogeny: evolutionary branching topology as representation of common ancestry, definition of ancestral forms, retracing the evolutionary steps
- Estimations
 - Length of time in each branch
 - Degree of divergence
- Identification of new forms
- Lateral transmission

Molecular information

What kind of information genetic analyses provide for

- Aligned sequences (nucleotides, amino acids): point mutations, rearrangements, new *loci*
 - Mutation theory, Neutral Theory
- Frequencies in polymorphic *loci*: divergence among populations as requisite for incipient speciation
 - Wright's island model and its follow-up
- Gene expression
 - Micro- and macroevolution