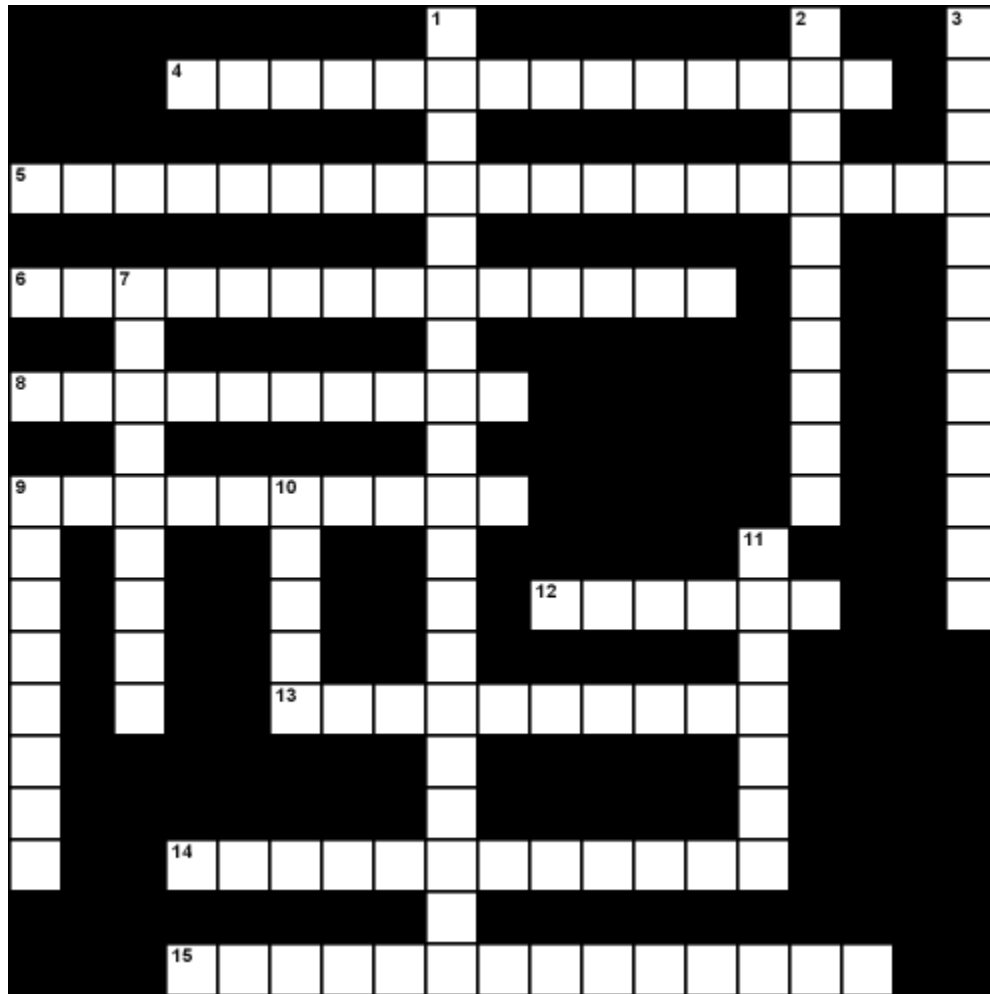


Crossword Puzzle for Synthetic Theory of Evolution

Topics 5-9: Small Population Size Effects, Gene Flow, Recombination, Non-random Mating and Micro and Macro Evolution



Across

4. Small changes in a population's gene pool occurring over a few generations. The accumulation of these changes in allele frequencies over many generations can result in macroevolution.
5. The form of non-random mating in which individuals who are alike for particular traits mate and those who are not alike do not. The result is a progressive increase

Down

1. The form of non-random mating in which individuals who are not genetically alike for particular traits mate and those who are alike do not. The result is a progressive increase in the frequency of heterozygotes and a decrease in the homozygotes for the

in the frequency of homozygotes and a decrease in the heterozygotes for the discriminated traits.

6. The mating of closely related individuals, such as brothers, sisters, or cousins. Another name for this mating pattern is "inbreeding." This is an extreme form of positive assortative mating.

8. The theoretical model of evolution in which species remain unchanged for long periods of time and then at times rapidly change as a result of major alterations in the environment and, subsequently, in natural selection.

9. The theoretical model of evolution in which species change slowly at a more or less constant rate through time into other species.

12. A term describing mate selection in which all individuals have an equal chance of being selected. In other words, there is no conscious discrimination for or against any individual or trait.

13. A severe genetically inherited fatal degenerative nerve disorder. The symptoms usually do not appear until early middle age. There is a progressive loss of muscle control that inevitably leads to paralysis and death. This disease has been found at an extraordinarily high frequency among the people in the Lake Maracaibo region of northwest Venezuela.

14. The exchange of genetic material between homologous chromosomes at the beginning of meiosis. This results in sperm and ova with greater genetic diversity due to a recombination of parental genes. Specifically, a portion of a chromosome is broken and reattached on another chromosome.

15. Major evolutionary changes in a population's gene pool, occurring over many generations, resulting in the evolution of new species.

discriminated traits.

2. The general term for the small population size effect caused by a dramatic reduction in genetic diversity of a population or species due to an ecological crisis that wipes out most members.

3. Evolution, or change, in gene pool frequencies resulting from random chance. This process of evolution occurs most rapidly in small populations.

7. A term describing mate selection based on one or more traits that are discriminated for or against.

9. The transference of genes from one population to another, usually as a result of migration, but not necessarily. The loss or addition of individuals or their genes can easily change the gene pool frequencies of both the recipient and donor populations.

10. Members of a conservative Protestant sect related to the Mennonites. They migrated to Pennsylvania from Switzerland in the late 18th century. The "Old Order" communities of this sect are relatively closed groups that shun most modern conveniences in their farming lifestyle. They use horse drawn carriages, dress very simply, and reject those who marry outsiders. They are similar to the Dunkers.

11. A small population effect in which the genes of a few people (the originators of the population) are inherited over time by a large number of descendants.

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