Moth Evolution Simulation Lab Report

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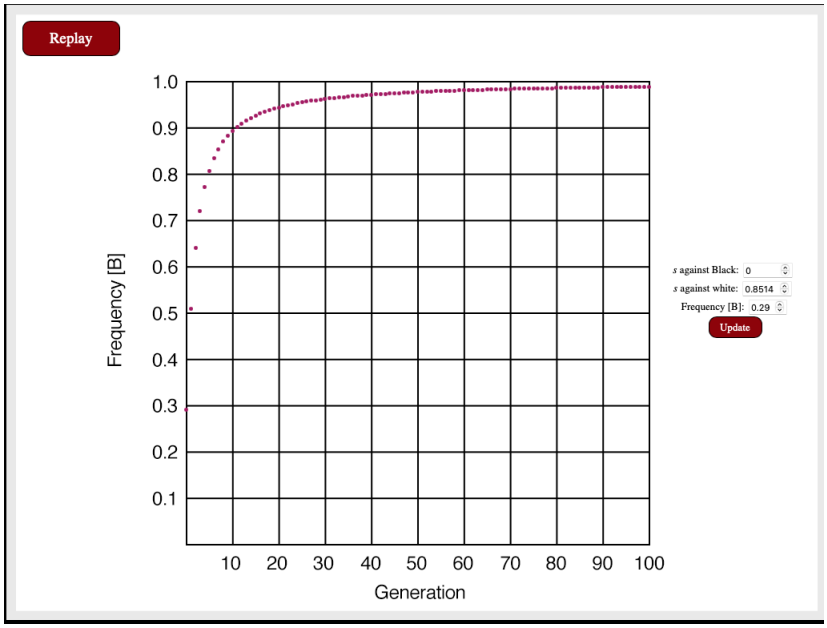
1. After the conclusion of this simulation, log your results. Start this by attaching a screenshot of your graph. In which direction did the allele frequencies change?



   - The frequency of the black allele in the population after 100 generations increased up to almost 1.

2. Explain the mechanism by which these changes occurred. What is this mechanism called?

   - Microevolution is caused only by five processes: selection, mutation, non-random mating, genetic drift, and isolation.

3. Which of the three genotypes do you think would be most fit in a rural area, far from cities, such as the woods in the far South of England?

   - The further away from industrial cities, the more white or "lighter color" moths would most likely best fit in rural areas. Without the environment effecting microevolution and natural selection, peppered moths with light-colored wings flecked with scattered dark sports would rest on lichen-encrusted tree trunks which made it very difficult for predators to spot.

4. Which of the three genotypes do you think would be most fit in the woods near industrial cities?

   - The "melanic" (dark) moths would best fit near industrial cities due to pollution since it makes the tree barks darker and melanic moths more conspicuous. This obviously made it harder for predators to find and prey on these melanic moths.

5. What do you think happened after England passed clean air laws?

   - If England passed clean air laws, then the trees would lighten from the previous darker trees that was caused by the pollution. These lighter trees would make the lighter moths more conspicuous and the melanic moths an easier target for predators to find.

6. Play around with the simulation and change the "selection against Black, selection against White." What do you notice?

   - It has an inverse relationship. The three genotypes: BB, Bb, bb