

7.012 EVOLUTION SECTION

You are a time-traveling evolutionary biologist studying a particular species of snake on an island off the coast of Massachusetts. You travel 300,000 years into the past and observe that the snakes are a variety of colors (red, blue, yellow, green) and that most of the snakes are blue. This same species of snake and the same mix of colors are found on the mainland.



a) Assuming that all the snakes are descended from an ancestral blue snake, where did the other colors come from?

At the present time, the snakes are still the same variety of colors, but most of the snakes are green.

b) Explain this change in color frequency (evolution) as though it were based solely on each of the following processes.....

i) Bottleneck effect.

ii) Founder effect.

iii) Migration.

iv) Non-random mating.

v) Natural selection.