

## **The Origin of Species**

### **Chapter 24**

1. Suppose two bird species live in a forest and are not known to interbreed. One species feeds and mates in the treetops and the other on the ground. In captivity, the birds can interbreed and produce viable, fertile offspring. Describe the type of isolating mechanism that most likely separates these species in nature. (Because the birds have different habitat preferences but can mate successfully in captivity, this is a prezygotic barrier resulting from habitat isolation.)
2. Summarize the differences between allopatric and sympatric speciation. Identify the type that is most common. Provide an explanation for why it is more common. (In allopatric speciation, a new species forms while in geographic isolation from its parent species. In sympatric speciation, a new species forms in the absence of geographic isolation. Gene flow is more likely in the absence of geographic isolation so sympatric speciation is less common.)
3. Predict whether allopatric speciation is more likely to occur on an island close to a mainland or on a more remote island of the same size. Provide an explanation for your response. (Allopatric speciation would be less likely to occur on an island near a mainland than on a more isolated island of the same size. Continued gene flow between mainland populations and those on a nearby island reduces the chance that enough genetic divergence will take place for allopatric speciation to occur.)