

# Bio 112 Handout for Evolution 7

This handout contains:

- Today's iClicker Questions
- Figures for this lecture

## iClicker Question #4A - before lecture

You will need to look these up on the web (hint: try Googling "broccoli species" for example). Which of the following sets of organisms are all members of the same species?

- A. broccoli, cauliflower, brussels sprouts.
- B. tomato, potato, deadly nightshade (belladonna)
- C. cow, pig, sheep
- D. human, chimpanzee
- E. more than one of the above

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## iClicker Question #4B - after lecture

Which of the following scenarios could not lead to the formation of a new species.

- A. A mutation occurs that allows seeds with that mutation to survive chewing and passage through the digestive tract of birds that eat the plant. Note that the birds that eat the plant travel many miles between eating the plant and depositing the seeds in their feces.
- B. A mutation occurs that changes the color of a flower such that it is no longer visible to its usual pollinator.
- C. A mutation occurs that causes animals with that mutation to be fertile in the fall instead of the spring.
- D. A mutation that leads to a behavioral alteration such that birds with the mutation prefer to nest on high cliffs instead of in the branches of trees.
- E. None of the above.

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### Beaming in your answers

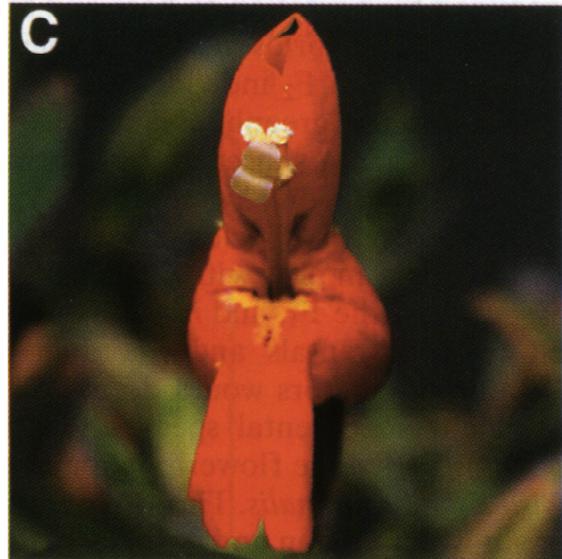
1. Figure out your answer and select the appropriate letter (A-E).
2. Turn on your iClicker by pressing the "ON/OFF" button; the blue "POWER" light should come on. If the red "LOW BATTERY" light comes on, you should replace your batteries soon.
3. Transmit your answer as follows:
  - a. Press the button corresponding to the answer you've selected (A thru E).
  - b. The "STATUS" light will flash green to indicate that your answer has been received. If the "STATUS" light flashed red, your answer was not received; you should re-send it until you get a green "STATUS" light.

## Examples of Speciation/Reproductive-isolation

Flowers:

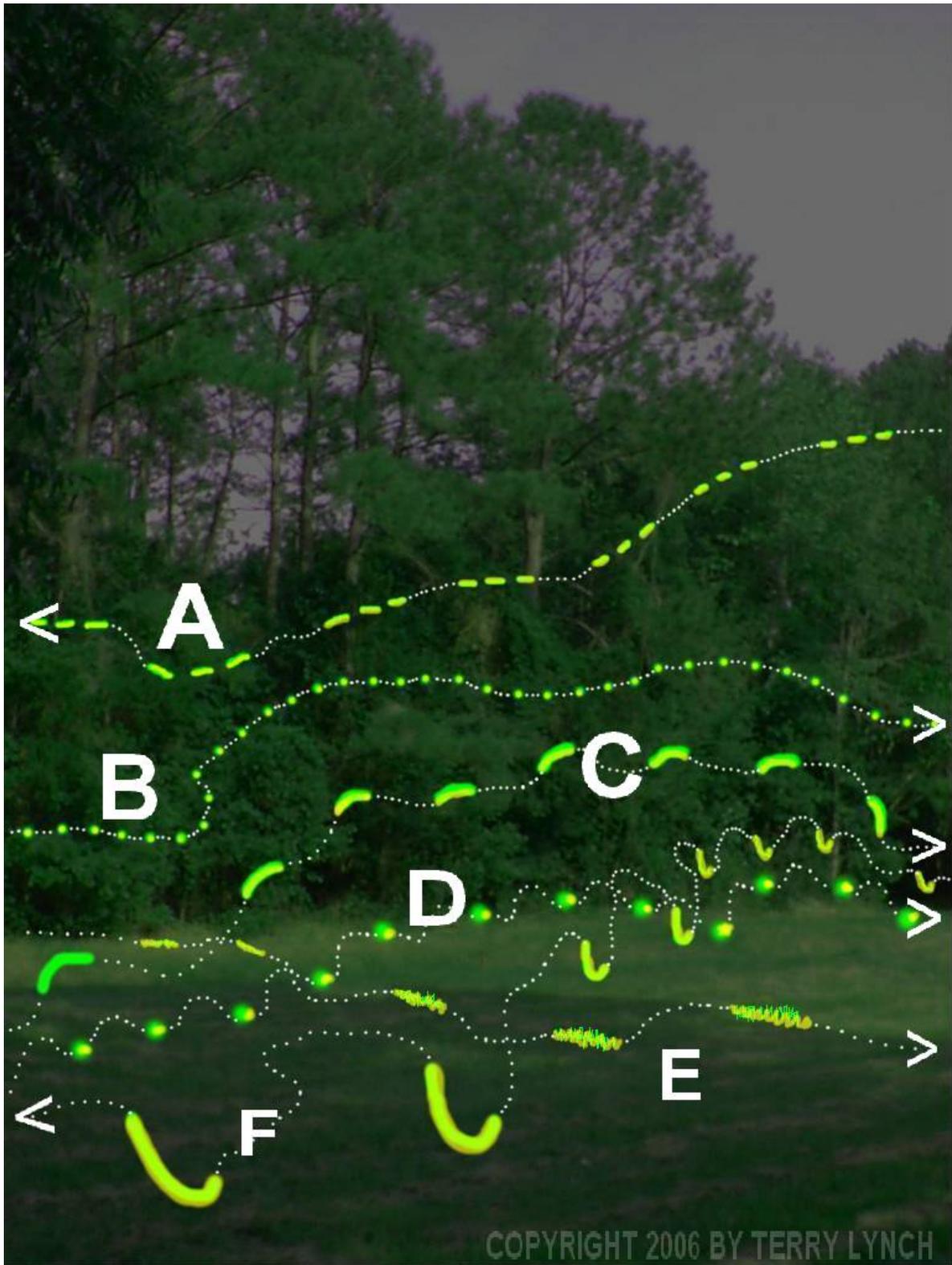


*Mimulus lewisii*



*Mimulus cardinalis*

# Fireflies



[http://byteland.org/naturalist/firefly\\_faq.html](http://byteland.org/naturalist/firefly_faq.html)

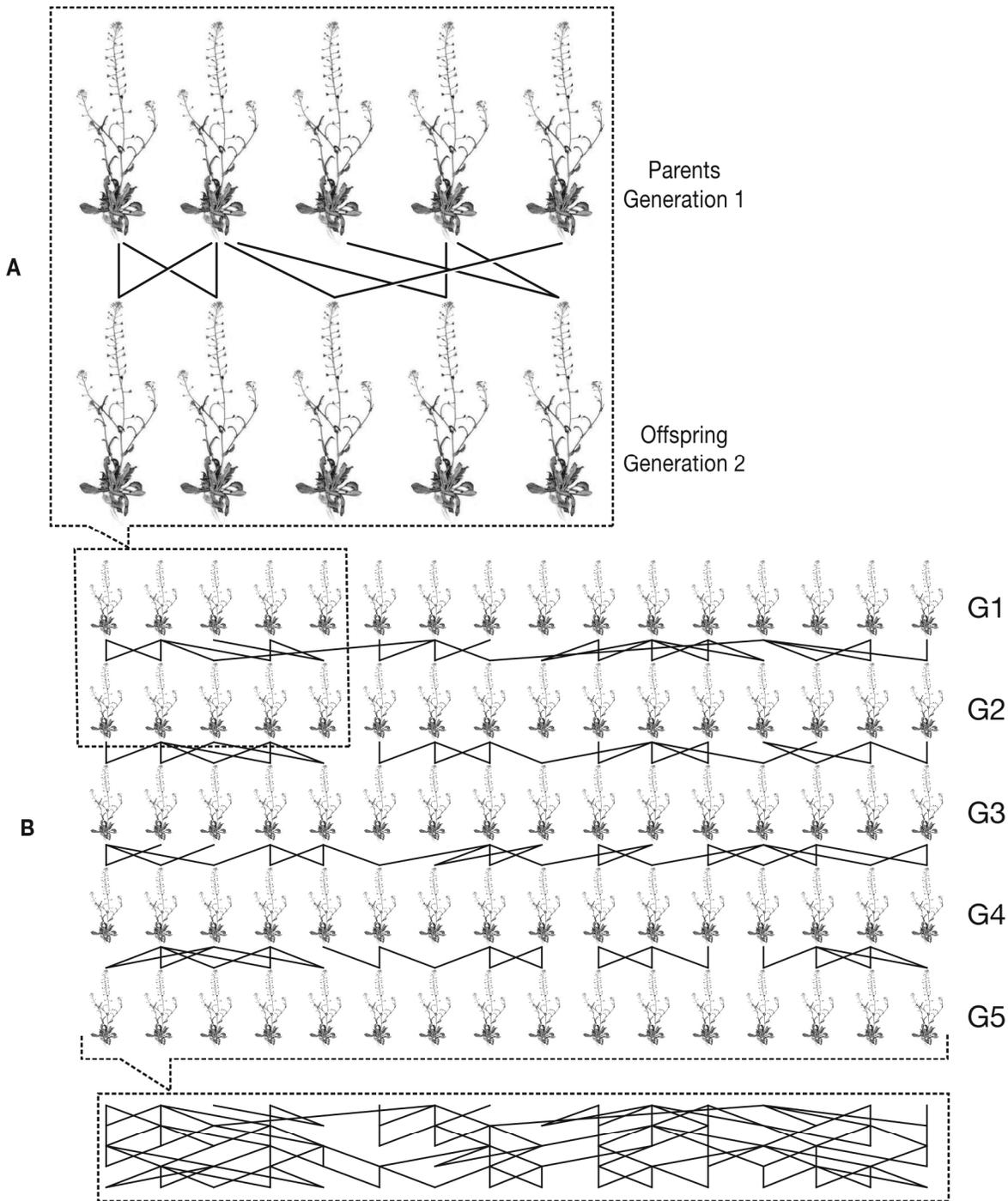
Evolution 7 - 3

Brian White Ph.D. © 2011

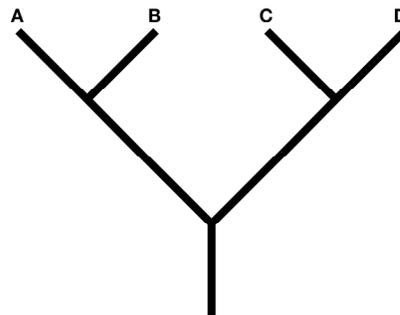
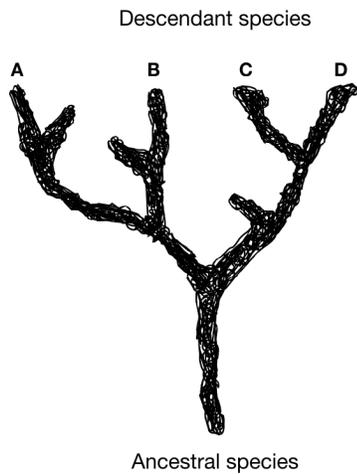
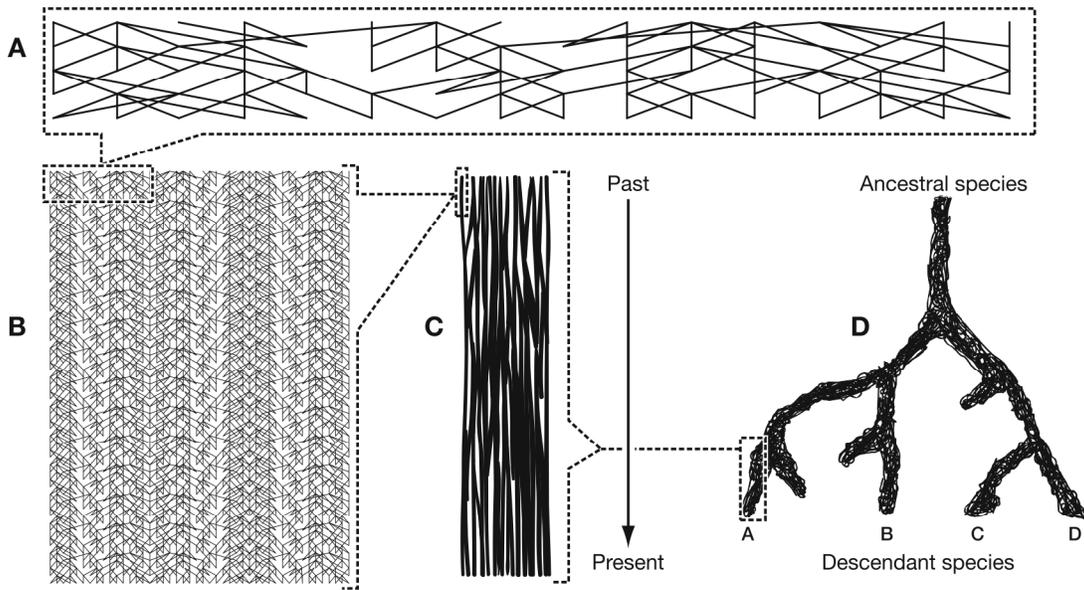


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# Speciation: the process



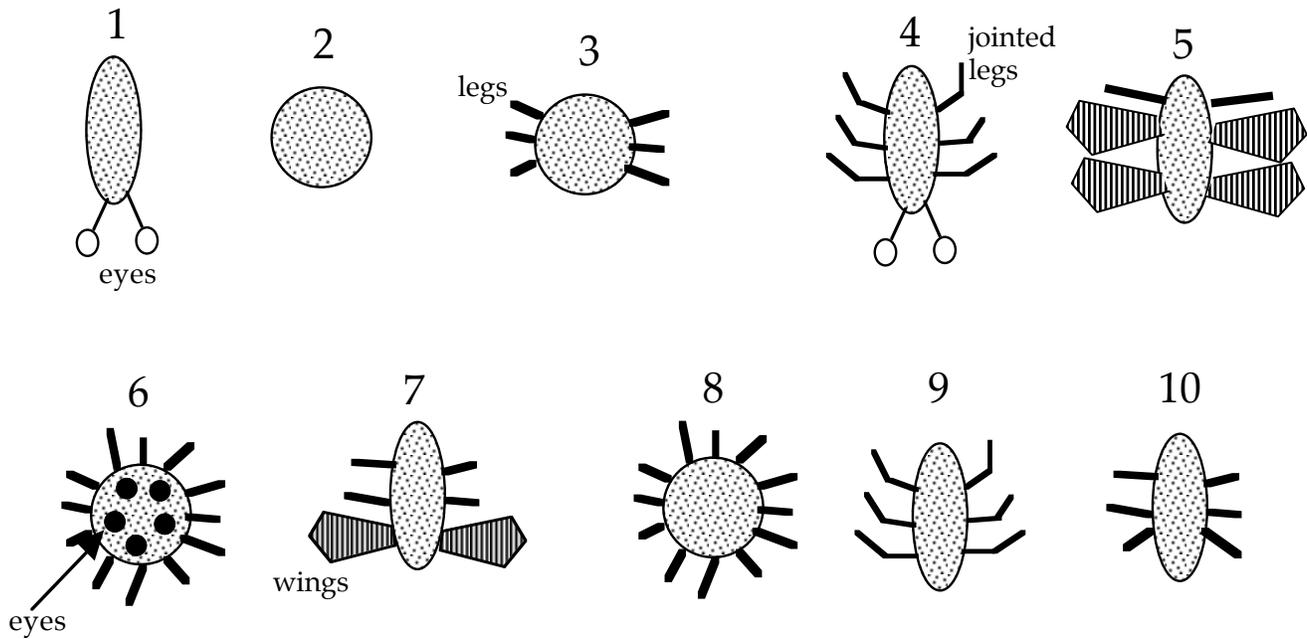
From ("Phylogenies & Tree Thinking" by David A. Baum and Susan Offner *American Biology Teacher* 70:4 222 [2008])



**A**

**B**

# Bio 112 Phylogeny Demonstration Problem



## Other info:

- in a layer of rock that is 600 million years old, you only find type 2.
- in a layer of rock 200 million years old, you find 4, 5, and 6 but not 1.

Suppose you found these fossil creatures on Mars. What might you conjecture about their evolutionary history?