

The Private Life of Plants: The Birds and the Bees

The video shows many pollinators in action, explains how different flower features match specific pollinators, and mentions some of the mechanisms that plants use to avoid self-fertilization. After viewing *The Birds and The Bees*, you should be able to answer the following questions.

1. Pollination Strategies

The video is full of examples where flower structure matches specific pollination vectors.

- a. How are the flowers of grasses adapted for wind pollination?
- b. Describe how the structure of the kangaroo paw flower fits with a bird pollinator.
- c. What features are generally found on flowers that are pollinated by hummingbirds? How does *Columnia* attract hummingbirds to small, inconspicuous flowers?
- d. Describe the features of the flowers of one of the *Protea* species described in the video that suit its pollinator, the bush mouse.
- e. What organism serves as the pollinator of traveler's palm? Describe how the pollinator and the traveler's palm are suited to each other.
- f. The South African *Gentian* flower provides an edible pollen to carpenter bees. How does *Gentian* insure that such valuable pollen does not go to the wrong pollinator.
- g. How are the flowers of the snapdragon relative and its particular bee pollinator adapted to each other?
- h. How are the mountain pride butterfly and the red "Pride of Table Mountain" orchid (*Disa uniflora*) adapted to each other for pollen transfer?
- i. Describe a hoverfly. What flower features match the hoverfly and assist its role as a pollinator?
- j. Describe the mechanism that orchids use to control their pollen distribution. How is this a useful adaptation for orchids but would be less useful for peach or cherry?
- k. How do some orchids attract and "reward" their pollinators?
 - euglossin bees
 - thynnid wasps (western Australia)
 - bee orchids (Europe)
 - iridescent bees
- l. How does the dead horse Arum attract its pollinator, the blow fly?
- m. How does the titan Arum attract its pollinator, the sweat bee? What is the likely explanation for having such a mechanism in the rain forest of Sumatra?

2. Describe how each of the following plants avoids self-pollination/self-fertilization:

- a. wild geranium
- b. *Aloe*
- c. balsam
- d. *Gentian*
- d. dead horse *Arum*
- e. titan *Arum*