

50. **The Orchid's Secret**
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Deep in the jungles of Colombia there is a kind of flower that attracts bees with its unique perfume. The male bees store as much scent as possible from this particular flower on their hind legs. The male bees that collect the most scent attract the female bees to mate with them. In Venezuela there is a flower people collect for its large white or yellow petals. Few people ever find it, though, since it only blooms for a few days. There is a small pink and yellow flower that only grows in a very specific part of the state of Florida. It also only grows on trees, and wind or birds may spread its seeds. These flowers are some of the most rare and delicate species in all of nature. They are all types of orchids.

For hundreds of years orchids have been prized discoveries of collectors and adventurers hoping to find new and exotic breeds of the flower. In her book *The Orchid Thief*, author Susan Orlean tells how in the 1800s orchids became popular in Europe, which made them very valuable. Many "orchid hunters" set out to find and bring back new types of orchids to sell. However, many of the men who went looking for the mysterious orchids met with tragedy instead. Orlean relates that "dozens of hunters were killed by fever or accidents or malaria or foul play. Others became trophies for headhunters or prey for horrible creatures such as flying yellow lizards and diamondback snakes and jaguars." Sometimes orchid hunters even were injured or killed by other people.

On one trip to find orchids in 1901, eight hunters ventured to the Philippines, which is a group of islands in the Pacific Ocean. A tiger ate one hunter, another was badly burned, and five more completely disappeared. The trip's only survivor brought back 47,000 orchids. Even modern-day orchid hunters, like Tom Hart Dyke, still face incredible dangers to collect the flowers. He and his partner, Paul Winder, were held as prisoners for over nine months after they were captured on an orchid hunt in Central America.

While the plants have long been valued for their beauty, they may be even more important to science and our understanding of co-evolution. Unlike plants that can self-pollinate, orchids need very specific insects or birds to spread their pollen. The process by which insects, the wind, or birds spread the pollen of different flowers is called pollination. Pollen is a powder produced by plants that contains their genetic material. In order for the plants to reproduce, the pollen must be physically moved to the flower's stigma, which contains an egg. Now the fertilized egg can become a seed. Birds and insects can pollinate plants by touching many different flowers and spreading the pollen around.

Orchids evolved to attract insects and birds. Because there are many different species of orchid, there are also many different ways the orchids attract their pollinators. Orlean explains that "many species look so much like their favorite insects that the insect mistakes them for kin [other insects], and when it lands on the flower to visit, pollen sticks to its body.... Another orchid imitates the shape of something that a pollinating insect likes to kill.... Other species look like the mate of their pollinator, so the bug tries to mate with one orchid and then another... and spreads pollen from flower to flower each hopeless time."

Other orchids don't use their shape at all, but rather produce specialized scents to attract specific insects, such as bees, beetles or flies. Some orchids smell like cake, some like chocolate, and some like rotting meat. All these smells may seem weird or gross, but they exist to lure creatures to their pollen and help the orchids survive. The strategies to attract insects and spread their flowers' pollen go on and on. Each family of orchids has a unique kind of insect or bird that visits their flowers, as well as its own way of attracting them. It has worked, too. According to NOVA, a science television series on PBS, "orchid species number more than 25,000 worldwide." That is more kinds of species than any other flower on the planet, and new ones are still being found.

Orchids and the insects that pollinate them are one of the most amazing examples of evolution. Though their degree of co-dependence varies, as it is apparent that at least some orchids are more reliant on their pollinators than the pollinators are on the orchids, the degree of evolutionary specialization is still very impressive. Research by Harvard scientists suggests that certain species of orchid evolved specifically to attract orchid bees, which collect a wide variety of scents from various plants in preparation for mating. In another case, an orchid mimics a female's smell and appearance—and the male pollinator gets nothing out of the bargain whatsoever. By tricking the insects that collect its pollen, the orchid has survived since the time of the dinosaurs. Shh! It's a secret.

Name: _____ Date: _____

1. What is an orchid?

- A) an insect that spreads pollen
- B) a scent from a flower that attracts insects
- C) a hunter in the Philippines
- D) a rare and valuable flower

2. What does this passage describe?

- A) This passage describes the Europeans who collected orchids in the 1800s.
- B) This passage describes what being a prisoner in Central America is like.
- C) This passage describes the life of Susan Orlean.
- D) This passage describes orchids and orchid hunting.

3. Read the following sentence: "Unlike plants that can self-pollinate, orchids need very specific insects or birds to spread their pollen."

What evidence from the passage supports this statement?

- A) In Venezuela there is a flower people collect for its large white or yellow petals.
- B) There are more than 25,000 species of orchids worldwide.
- C) Many orchids use their scent to lure insects to their pollen.
- D) Many people who went looking for orchids met with tragedy instead.

4. Why might orchid hunters be willing to face dangerous challenges in order to get orchids?

- A) Orchids are worth a lot of money.
- B) Some orchids use their scent to attract insects.
- C) Some orchids look like insects.
- D) The orchid has survived since the time of the dinosaurs.

5. What is this passage mainly about?

- A) the Philippines and the dangers of hunting orchids there
- B) orchids, orchid hunting, and orchid pollination
- C) an orchid hunt that Tom Hart Dyke and Paul Winder went on
- D) a species of orchids that lives deep in the jungles of Colombia

6. Read the following sentence: "Other orchids don't use their shape at all, but rather **produce** specialized scents to attract specific insects, such as bees, beetles or flies. Some orchids smell like cake, some like chocolate, and some like rotting meat."

What does the word **produce** mean in the sentence above?

- A) remove
- B) deliver
- C) change
- D) make

7. Choose the answer that best completes the sentence below.

Many orchids attract insects with smells, _____ cake, chocolate, and rotting meat.

- A) such as
- B) although
- C) meanwhile
- D) but

8. What is pollination?

9. What are three ways orchids attract insects to spread their flowers' pollen?

10. The title of the passage is "The Orchid's Secret." Based on the information in the passage, what secret may the title be referring to? Use information from the passage to support your answer.
